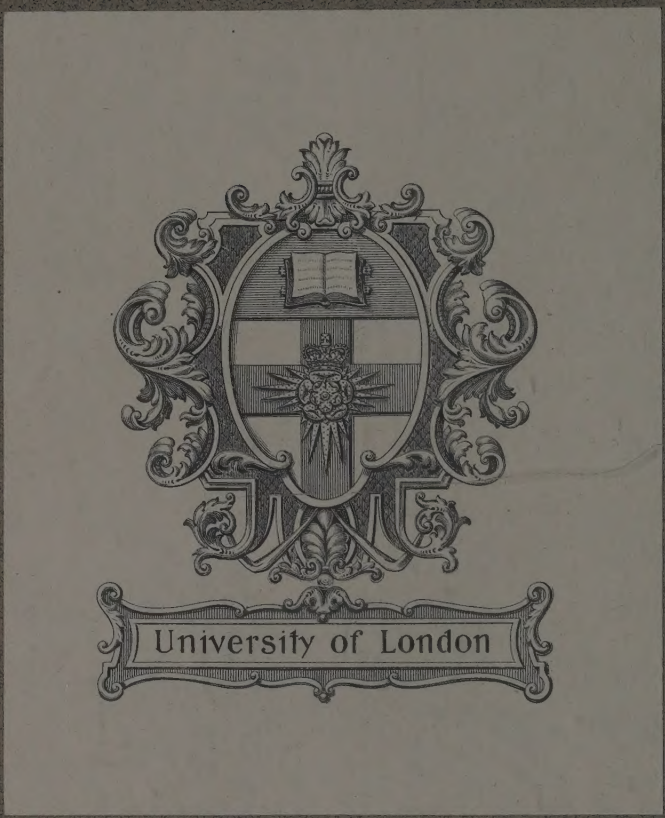
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REPORTS

FROM

COMMISSIONERS, INSPECTORS,

AND OTHERS;

TWENTY-SEVEN VOLUMES.

—(3.)—

EXPLOSIVES; MINES.

Session

8 *February* — 15 *August* 1876.

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ANNUAL REPORT

OF

HER MAJESTY'S INSPECTOR OF EXPLOSIVES

UP TO

31st December 1875.

Presented to both Houses of Parliament by Command of Her Majesty.

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ANNUAL REPORT OF HER MAJESTY'S INSPECTOR OF EXPLOSIVES.

SIR, Home Office, 1st January 1876.

I HAVE the honour to furnish the following report of the inspections and other work carried out under the Gunpowder and Nitro-glycerine Acts, between the 1st of April 1875 and the 31st of December 1875. My former reports have been made up to the 31st of March of each year, and have dealt with the preceding period of 12 months. But in consequence of the coming into operation on this day of the Explosives Act, 1875, (38 Vict. c. 17) by which the Gunpowder and Nitro-glycerine Acts are repealed, I have thought it advisable to make my report now, in preference to waiting for the 1st April, and thus to draw a clear line between the operation of the old and new Acts.

The number of Government inspectors under the Gunpowder and Nitro-glycerine Acts has remained the same as at the date of my last report, viz., two; and Major Ford and myself have continued to hold the appointments.

The following table shows the number of inspections made by us during the year, as well as the number of places previously inspected. Return of Inspections made.

Places Inspected.	No. of Inspections previous to April 1st, 1875.	No. of Inspections from April 1st, 1875, to Dec. 31st, 1875.									Total No. of Inspections up to Dec. 31st 1875.	Remarks.
		1st Inspection.	2nd Inspection.	3rd Inspection.	4th Inspection.	5th Inspection.	6th Inspection.	7th Inspection.	8th Inspection.	Total No. in year ending Dec. 31st 1875.		
Gunpowder Factories	74	–	1	1	8	–	1	–	–	11	85	
Factories of Gun Cotton, Dynamite, and miscellaneous explosives	23	1	2	–	1	–	–	1	1	6	29	
Blasting Fuze Factories	18	–	–	–	4	–	–	–	–	4	22	
Blasting Cartridge Factories	11	–	–	1	1	–	–	–	–	2	13	
Ammunition and Percussion Cap Factories	38	–	–	–	–	–	–	–	–	–	38	
Fulminating Mercury Factories	4	–	–	–	–	–	–	–	–	–	4	
Firework and Fog Signal Factories	118	3	4	2	–	–	–	–	–	9	127	
Gunpowder Store Magazines	376	19	12	3	1	–	–	–	–	35	411	
Gunpowder Mine Magazines	429	81	21	6	–	–	–	–	–	108	537	
Magazines for Nitro-glycerine compounds	154	46	4	2	–	–	–	–	–	52	206	
Gun-cotton Magazines	1	2	–	–	–	–	–	–	–	2	3	
Small-arm Ammunition Magazines	1	–	–	–	–	–	–	–	–	–	1	
Totals	1,247	–	–	–	–	–	–	–	–	229	1,476	

The number of inspections made during the nine months to which this report relates is somewhat larger than the number made during *the corresponding period*, included in my last report, being 229 against 207, a circumstance due in some degree to the fact that during the year ending 31st March 1875, Major Ford and myself were very laboriously occupied by the Parliamentary inquiry into the subject of Explosives, and the preparation of the Bill on the subject which has since become law in the shape of the Explosives Act, 1875. But a bare record of the number of inspections, for reasons which I pointed out in my last report, really affords "no sufficient indication of the work actually accomplished." And during the past nine months, moreover, there has again occurred what may be regarded as an exceptional interruption to the work of actual inspection, in the shape of the very heavy and almost incessant pressure entailed upon the Department in connection with the preparations for bringing the Explosives Act of last session into operation on this date.

The work entailed upon this Department in connection with the new Act has been of a most arduous and anxious character, and has made such considerable inroads into

the time at the disposal of Major Ford and myself, as to have rendered the carrying on of inspections during the last four or five months of the nine to which this report relates, almost a physical impossibility.

But before dealing more particularly with the Explosives Act, I think it desirable that I should notice such points in connexion with the Gunpowder and Nitro-glycerine Acts, (which are repealed by the new statute) and the work carried on under the same, as seem to call for observation.

Illustrations of defects of the old Acts.

During the past nine months some further illustrations of the defects and shortcomings of the Acts under which Major Ford and I have hitherto carried on our duties, and now happily superseded, have presented themselves.

For example, in the course of his inspections, Major Ford accidentally stumbled upon an establishment in which the drying, preparing for use, and re-packing of gun-cotton were being carried on upon a large scale, of which, notwithstanding that the factory had been at work since 1873, we had no knowledge whatever, owing to the absence of returns of factories of explosives.

In another instance, it having come to our knowledge that the manufacture of a certain explosive had not been so carried on as to ensure the production of a thoroughly pure article, and having, in fact, found some of the material in a condition of impurity which warranted grave doubts as to its chemical stability, we were unable, owing to this absence of returns, to trace with any certainty the places where the material was likely to be found, or to communicate direct with those who might have supplies of it under their charge in order to warn them as to its condition; at the same time, the Company declined to give us the necessary information as to where supplies of it might be found, on the ground that any communication from this Department to their customers would be seriously damaging to the interest of the Company. And, more than this, the Acts gave us no power to *require* the material which was in this impure condition to be re-manufactured; or supposing it to have been in an active state of decomposition, to be destroyed or rendered harmless; we had therefore to rely upon the doubtful effect of such representations as we were able to make to the manufacturers to secure the needful result.

But a worse example of the shortcomings of the old Act is furnished by the following occurrence:—

I received information that at a certain house in Westminster, there was stored a quantity of explosive material, equivalent to about two tons of gunpowder. Inquiries which were made satisfied me that the quantity was probably not less than about 5 or 6 cwts., and as the explosive was of a more powerful character than gunpowder, it is certain that the amount was, at any rate, dangerously large.

Had the explosive been ordinary gunpowder, the case would have been simple. A search warrant could have been obtained and any powder found in excess of what might lawfully be kept in a dwelling house removed. But the explosive was not ordinary gunpowder, nor anything the keeping of which (apart from the making) was strictly regulated by the Gunpowder Act.

Accordingly the case was not one in which a search warrant could be obtained, and had it been obtained, it is doubtful if any action could have been taken, seeing that the keeping of this or any other quantity did not appear to constitute an offence against the statute. Probably proceedings might have been instituted at common law for a nuisance, but such proceedings would obviously be wanting in that promptness of application which in a case of this sort is essential. Assuming the presence of this quantity of explosive to be dangerous, the danger existed during the whole time the material was there, and before the proceedings indicated above could have been taken, the disaster, which it was desired to avert, might have occurred. Under the circumstances there was nothing to be done but to write to the owners of the explosive stating that the Department had become aware of its existence, and suggesting its removal. In this instance the remonstrance was effective; but it is clear that the public safety was very insufficiently secured by a statute which left the removal of a dangerous accumulation of explosive in the midst of the metropolis optional with the person by whom such explosive had been originally deposited there.

In my former report I mentioned a case in which a certain explosive blasting agent was found by Major Ford in boxes actually labelled "Non-explosive cartridges." During the period to which this report relates, a similar instance has come under my notice, in the shape of a number of boxes of dry guncotton packed in boxes labelled "*wet* guncotton." Such dangerously misleading misdescription could not be met by any provisions of the now superseded statutes, but the Explosives Act, 1875, will, it is

satisfactory to think, expose a person who wilfully or inadvertently uses such misdescription to considerable penalties.*

In another case, the detonators, required to fire an explosive, were packed in the same case with the explosive itself, a piece of carelessness or stupidity which may fitly be compared to the putting of the igniting surface of a Bryant and May's match box *inside* the box, instead of outside. But the case was not one in which the Gunpowder Act gave authority for any direct interference or imposed a penalty; nor did that Act enable the iron nails, with which we have sometimes found boxes containing explosives secured, to be actually prohibited.

A remedy for such evils as the above will, I trust, be found in the more comprehensive provisions of the new Act. With such practices in operation it must be regarded as a matter no less for surprise than for congratulation that we have not had to record more numerous and more serious accidents than those which appear in the following table.

Accidents by explosion and fire.

ACCIDENTS by FIRE and EXPLOSION which have come under the notice of the HOME OFFICE during the nine months ending 31st December 1875.*

Nature of Explosive.	No. of Accidents.	Killed.	Injured.	Index No. in List of Explosions. (See Appendix A.)	REMARKS.
Gunpowder - -	8	11	7	1, 3, 4, 5, 6, 7, 8, 10	
Patent cotton gunpowder -	1	—	—	2.	
Dynamite - -	1	1	3	11.	
Fireworks - -	1	3	3	9.	
Total -	11	15	13		

** In addition to the above, an accident with "nitro-benzine" (? nitro-benzol) was stated by some of the newspapers to have taken place at Milnebridge, near Huddersfield, but the accident did not come under the cognizance of this Department, and as no one was killed or injured inquiries respecting it were not instituted.

From this table it will be seen that the number of accidents by fire or explosion which have come under the notice of the Department during the nine months which have elapsed since my last report was rendered, is 11, causing, (so far as is known) 15 deaths and injuring 13 persons. This list of casualties when compared with corresponding periods in 1873 and 1874 is very light. The total number of accidents of which this Department had cognizance in the former year was 25, causing 22 deaths and injuring 31 persons, and in 1874 the number was 27, causing 24 deaths and injuring 20 persons; so that the proportion for nine months of those years would be, respectively

Years.	No. of accidents.	Deaths.	Injured.
1873	$18\frac{3}{4}$	$16\frac{1}{2}$	$23\frac{1}{4}$
1874	$20\frac{1}{4}$	18	15

which gives, it will be observed, a sensible reduction during the nine months just completed. But, as I have already explained in former reports, I do not think too much importance should be attached to the returns of accidents, because it has not hitherto been compulsory on persons upon whose premises they have occurred to make any report of them, and it has thus been purely by chance in the large majority of cases that this Department has heard of the occurrence. I do not of course believe that any important

* A rather remarkable example of misdescription in the opposite direction came under the notice of the Department during the year, in the case of a package which was reported to have arrived in the Port of London, for re-exportation to China, labelled "explosive" and which the consignees in London affirmed contained an explosive of so subtle and dangerous a character that the package would not admit of its being opened for examination by the Custom House officers without danger. This Department was applied to for assistance, some alarm having been excited by the presence in the Thames of such a package.

On inquiries being instituted, the consignees in London eventually admitted that the material was not an explosive at all, and they permitted the case to be opened and examined. It was found to contain a quantity of labels marked "Chateau Margaux, 1845" some wine corks, and a tin case containing Methyllic Ether. Seeing that Methyllic Ether is extensively used in the manufacture of spurious wines, it is not very difficult to conjecture the reasons which had influenced the adoption of a label designed to prevent investigation of the contents. However, in this case the scheme failed in its object, for the regulations of the Custom House were infringed by the misdescription of the goods, which accordingly became liable to forfeiture. I have on former occasions had to remark on explosives being labelled "Hungarian Wine," but this is the first instance within my knowledge in which the intended ingredients of so-called wine have been labelled explosive.

explosion would be likely to escape our notice; but I think it is most probable, I might almost say certain, that some minor accidents causing perhaps a death or two apiece, and only exciting local attention, have occurred of which we have had no cognizance whatever. So that the return above given is not to be accepted as reliable or exhaustive, and is only roughly useful for the purpose of comparison.

Bremerhaven explosion.

Of serious explosions, such as the Regent's Park explosion of 1874, the past nine months have, so far as this country is concerned, been happily free; but this report would scarcely be complete if it did not contain some reference to one of the most remarkable explosions on record, viz., that which occurred at Bremerhaven on the 11th December 1875, by which about 100 persons lost their lives, and many others were injured.

It has been placed beyond doubt that the explosion was connected with an attempt, on the part of a man called William King Thomas (*alias* William King Thomson but believed to have been really named Alexander Keith), to commit one of the most diabolical crimes ever perpetrated. Through the courtesy of the Foreign Office, I have been furnished with a very interesting report on the subject of this explosion by Her Majesty's consul at Bremerhaven (Mr. Ward), and from this and the details collected by the German authorities, it is possible to form a very good idea of the circumstances attending this disaster, which resulted directly from the explosion on the wharf at Bremerhaven of a large case containing an explosive belonging to Thomas. The man afterwards committed suicide, but confessed before his death that the case was furnished with a clockwork apparatus which was intended to be wound up at Southampton, and which, after eight days, would operate to cause the explosion of the contents, and so to secure the destruction of the vessel, on board of which Thomas intended to ship a quantity of over-insured goods.

The sole motive for the wholesale murder, which it was deliberately contemplated to effect by these means, was the obtaining of the difference between the insurance and the actual value of the goods which the murderer had shipped.

There were two principal points in connexion with this accident as to which it appeared to me most desirable, from a practical as well as from a scientific point of view, that full information should, if possible, be obtained; viz., 1st. What was the explosive contained in the case; 2nd. By what means was it exploded.

Happily, the diligent inquiries of the German Government enable us now to answer both these questions with tolerable confidence. With respect to the first point, it was from the first generally assumed that the explosive employed was some form of nitro-glycerine. But the important question still remained:—What form of nitro-glycerine was it? Was it simple nitro-glycerine, or some preparation of the same—some form of dynamite? Until the results of the inquiries of the German Government were made known, there was room for very considerable doubt on this point. The supposed circumstance, that the man had taken the trouble to obtain the explosive from America, favoured the theory that it was nitro-glycerine, and not dynamite, for the latter material can readily be obtained in Germany, while unmixed nitro-glycerine, it is believed, cannot. On the other hand, nitro-glycerine is used and can be obtained in America.

In fact, many of the German newspapers appeared to regard it as certain that the material was nitro-glycerine and not dynamite.

Happily the investigations instituted by the German police have set this point completely at rest. The material, it appears, was the particular nitro-glycerine preparation known as "lithofracteur," and it had been purchased of Messrs. Krebs and Co. of Kalk, near Cologne, upon whom Thomas (then under the *alias* of Garcie) called on the 21st December 1874. On that occasion, Thomas gave an order for a quantity of lithofracteur, stating that he required it for blasting quartz rock in Jamaica, to which country he said he belonged. On the 19th March 1875, Thomas, (still under the *alias* of Garcie) presented himself at Kalk, and received 700 lbs. of lithofracteur, wrapped in parchment, and packed in pasteboard boxes of 5 lbs. each, and on the following day he is again traced at the Magdeburg station in Leipsic, having arrived from Cologne, and having with him two large trunks and a small chest, which were deposited in the luggage office, where they remained for a few weeks, at the end of which time Thomas re-appeared with a fellow traveller, having with them a chest, which they told the porter to handle carefully as it contained a clock. Thomas and his fellow traveller were at first desirous of depositing the chest with the other luggage, but on second thoughts they took it away with them, and after another fortnight the porter received instructions from Thomas to take the three cases which had been deposited in the luggage room to to the Hôtel de Pologne. Here, it is stated, the porter heard Thomas called by his

real name. At this hotel Thomas had rented a storehouse, in the courtyard, and to this storehouse in addition to his other boxes, he brought, some time in May, "some-"thing between a barrel and a chest, into which he put a smaller barrel, replacing the "smaller barrel a little later by a double bottom." A journeyman cooper who measured the chest in order to make the double bottom, saw it filled first one-half and then three-fourths "with small parcels in grey paper."

A good deal of care and secrecy seems to have been exercised by Thomas with regard to the chest, the packing of which was at last completed, and then Thomas told the hotel porter it contained hardware, and directed him to mark it "G. S. T. 10." The chest, when packed, weighed 495 kilos (roughly, 1,000 lbs). and it was sent (as hardware) to W. K. Thomas, at Bremerhaven, to be kept at the station until called for. It arrived at Bremerhaven 1st June 1875. Meanwhile, it should be noticed that a maid servant of Thomas had found in a room in his house at Dresden, which had been kept under lock and key, two chests, one of which contained parchment rolls, doubtless the pieces of parchment in which the lithofracteur had originally been packed.

The further fortunes of the chest, which had been so carefully prepared in the storehouse of the Hotel de Pologne, have been closely followed by the German Police, and it appears to have been despatched by Thomas on the 5th June 1875 to New York, in the Lloyd steamship "Rhine." On the preceding day Thomas had effected through Messrs. Baring Brothers an insurance on property of his on board the "Rhine," to the alleged value of 9,000*l.*; but he had not stated what the property was, nor did he reply to Messrs. Baring's letter of inquiry on this point.

Thomas ultimately travelled to New York (viâ London and Liverpool), and on his arrival found the "Rhine" with his chest on board, and it is stated that a person calling himself George S. Thomas, and asserting that he was brother of the owner, appeared at the Custom House, and asked to have the chest entered in the store of goods for re-exportation, and therefore imported duty free. The contents were stated to be polishing paste.

The chest was bonded on June 29th. The "George S. Thomas" of this transaction is stated to have been in reality W. K. Thomas, the photograph of the latter having since apparently established the identity.

Thomas returned to Dresden (viâ Liverpool) in August 1875, and on the 3rd August he re-visited Messrs. Kreb's factory (under his old *alias* of Garcie) and ordered 5 lbs. of lithofracteur, 20 detonators, and 4 watertight sacks, giving directions for them to be kept for him. He returned on 30th September 1875, taking his purchases with him, together with some fuze, 12 more detonators, and 50 lbs. more lithofracteur. Meanwhile he had had constructed, by a Dresden locksmith, two iron chests, in the lid of each of which was a hole nearly an inch in diameter. These chests were placed in a wooden chest which fitted exactly. At the same locksmith's he ordered four tin boxes 5 inches square, exactly fitting into each other, and the uppermost having on the lid an iron ring strong enough to bear several hundredweight. This apparatus was placed in a wine barrel, which, together with one of the two iron chests Thomas fetched from the locksmith towards the end of September.

The other iron chest he left at the locksmith's. On October 4th, Thomas went viâ London to Liverpool, where he remained about a week at the North-Western Hotel, and he appears to have been engaged, but without success, in effecting an insurance on his chests, which he asserted contained 6,000*l.* worth of specie, but which he refused to have counted. The German official report states that the chests really contained small shot. Thomas again made his way to New York, and gave instructions for the original Leipsic chest to be sent back to Bremen by the "Rhine," and the chest (identified by the mark "G.S.T. 10" recorded in the Custom House books) arrived at Bremerhaven on November 11th, and was sent on to Bremen and stowed away in the Weser Railway Station. On 24th November Thomas arrived at Bremen (having on the way called at Bremerhaven, where he expected to find his chest). On the 25th he wrote (as Garcie) to Kalk for 8 metres of fuze, and this duly reached him on November 27th. On the 24th November he rented an empty stable, to repack, as he said, a quantity of knives and forks; and on November 25th he removed his chest from the Weser Railway Station to the stable. On November 27th he took a clockwork apparatus to a clockmaker, asking him to clean it as quickly as possible. The clockmaker identified this apparatus as similar to that which Herr Fuchs, a clockmaker at Bernburg, states he had made for Thomas, to instructions given by him. Of this clockwork more will be said hereafter.

Thomas called for the clockwork on the 2nd or 3rd of December. It had then been repaired, but the clockmaker had wound it up, and Thomas expressed his dissatisfaction at his having done so, and asked how many days it would run. On the 2nd December

Thomas ordered another barrel of a cooper, who sent it to the stable on the 3rd December, and on the 4th one of the cooper's workmen was directed to assist Thomas in closing the barrel.

The following passage is so important, that I prefer to transcribe it verbatim from the translated account of the German authorities.

"The journeyman, besides two other barrels, partly filled, found in the stable the barrel "provided by Delvendal half full of small pasteboard boxes and guttapercha parcels. "Thomas made the journeyman insert a strong board in the middle of the barrel, and "pierce a hole in the centre of the board. Thomas was present at the work, and would "not answer questions concerning the nature of the goods. On the 6th December the "same journeyman closed the barrel. The lid was on when he entered the stables, so "that he had nothing to do but to nail it down and put a hoop round it. Thomas "handed the nails to the man, and upon the latter taking up a longer nail, which he "thought would be securer, though it might penetrate the lid, Thomas, in a great "fright, tore him away from his work. In the two other barrels there was nothing but "loose paper and pasteboard. One of these barrels—the one brought from the Weser "Railway Station—was subsequently returned to Leipsic, where it was identified as the "one prepared in the courtyard of the Hôtel de Pologne. The paper and pasteboard "found in it were identified at Kalk as envelopes used at the dynamite works. To one "of the pasteboard pieces adhered a black speck, which chymical analysis with tolerable "certainty made out to be lithofracteur."

On the 11th December the filled chest was sent by Thomas's directions to Bremerhaven to go to New York by the "Mosel." "Thomas gave the contents as caviar, expressly "requesting the Lloyd attendants 'to keep it in a warm room as it might be spoiled.'" The chest was then addressed to Charles J. Harvey, New York, and insured for 150*l*. It arrived at Bremerhaven and was lifted by some carriers from one of the waggons in which passengers' goods were transported from the station to the ship. It slipped out of the carriers' hands, and falling on the ground exploded instantly, killing over 100 persons and producing the most dreadful havoc.*

Such is in outline the story of so much of the Bremerhaven disaster, as traced out by the German police authorities, as is connected with the nature of the material employed, and which there can, I imagine, now be no doubt was "Lithofracteur." Whether it was Lithofracteur of the exact composition of that now licensed for use in this country is not stated, but no doubt it was a substance similar in general characteristics to the Lithofracteur licensed for the English trade use, which is required to be of the following composition, viz.—

Lithofracteur, consisting of not more than 55 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 45 parts by weight of a pulverized preparation, consisting of 1 part by weight of charcoal, bran, and sawdust (*or* of any one or more of the same), $3\frac{1}{2}$ parts by weight of an infusorial earth known as kieselguhr, $2\frac{1}{2}$ parts by weight of nitrate of baryta and bicarbonate of soda (*or* or either of them), $\frac{1}{2}$ part by weight of sulphur and manganese (*or* of either of them), and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

2nd. The question has next to be answered:—How was the explosion produced?

This point is of importance, because if it should appear that a wooden case containing lithofracteur is liable to be exploded by a fall from the hands of persons carrying it, the matter would have a most serious bearing upon the question of the transport of that material and of analogous preparations. So far as the experiments which have been made in this country go, they appear to point to the conclusion that such a result would be impossible with ordinary lithofracteur or dynamite. For example, in the course of some experiments which were made with lithofracteur on the 22nd February 1872, a cardboard box of the substance weighing 5 lbs., and enclosed in a wooden box, was thrown from the top of a quarry on to the rocky ground below, a height of about 150 feet. The box was broken, and several of the cartridges were thrown out, but, there was no explosion. On another occasion (26th June 1872) a wooden box containing 56 lbs of dynamite packed in 10 cardboard boxes, was allowed to fall from the top of a quarry, a height of 60 feet, on to the broken shingle below. The box was slightly broken, but there was no explosion. The experiment was repeated on to solid rock, a height of 130 feet, again no explosion. A 5 lb. cardboard box was dropped 130 feet on to a rock, but there was no explosion (Report of House of Commons'

*In Appendix B, I have given an extract from a report of Her Majesty's consul at Bremerhaven (Mr. Ward) in which some particulars are furnished as to the extent of the destruction produced by this explosion.

Committee on Explosive Substances, 1874, pp. 336, 352). In none of the instances, however, was the substance in a frozen condition,* and I am not aware of any experiment directly bearing on the behaviour of *frozen* nitro-glycerine preparations under these conditions; and as the lithofracteur which exploded at Bremerhaven was almost certainly frozen, a severe frost having set in, the conditions were not analogous, and it may be desirable to take an opportunity hereafter of carrying out the experiments above referred to with a view to investigate more particularly the behaviour of *frozen* nitro-glycerine preparations when subjected to the concussion of a heavy fall, although, as will presently appear, such an investigation can hardly have any direct bearing upon the question of how the Bremerhaven disaster was brought about, for the immediate cause of that disaster will, I think, become sufficiently apparent when the clockwork and striking apparatus which Thomas had provided and placed inside the case are considered. It appears with regard to these, that Thomas had for some time been in communication with Herr Fuchs of Bernberg, a clock maker, with reference to the producton of a peculiar apparatus which was to be worked by clockwork and which, at the end of 8 or 10 days, would release a lever strong enough to descend with a force of 30 lbs.; and he stated that he required this apparatus for use in his Russian silk factories, the object of the striking apparatus, he alleged, being to sever a thousand silk threads at a single blow. Herr Fuchs ultimately accepted the order, and delivered the mechanism at Leipsic, April 20th 1875. Thomas received Fuchs at the Leipsic station and showed him some chests destined for Russia, as he said, and only waiting for the clock. He then took him to the Hôtel de Pologne, where the machine was tested, and being found satisfactory was paid for. Of this apparatus I have been able through the kindness of Dr. Dupré to obtain a drawing made from memory by one of the clockmakers with whom Thomas was in communication. This drawing shows both the clockwork, and the striking apparatus; and the cause of the premature explosion of the chest at once becomes evident on an examination of this drawing. It appears that the vertical rod or striker by which the explosion was to be brought about, and to the arms of which were attached two powerful springs, was only kept from descending by a horizontal lever, which fitting into a notch in the head of the striker held it up against the springs. This lever, in its turn, was held in position by a little notch in the head of a vertical lever. It was intended that this last lever should be forcibly released by the pressure against it of a pin on a revolving disc, this disc being made to revolve by the clockwork, which was carefully regulated to bring the pin against the lever at the end of the required 8 or 10 days. The pressure of this pin would force the head of the lever out of position, and so release the horizontal lever by which the hammer, was held up against the springs. The hammer would thus at once be free to descend with all the force due to the operation upon it of the two powerful springs. But it is evident that if anything occurred to release either of the levers prematurely, a premature fall of the striker and consequently a premature explosion must result. Now, in the drawing, a small detent spring is shown where it might be introduced in such manner as to exert sufficient pressure against the back of the vertical lever, to keep it in position until the operation of some greater force upon it should overcome the resistance of the detent spring. *But in the actual apparatus, no detent spring had been provided.* It must be remembered that Herr Fuchs understood that the clockwork was intended for use in a factory, and he had no conception that it was intended or desired to withstand the shock of a violent concussion. Had he known this, he would no doubt, as a skilful mechanician, have pointed out this fatal flaw in the design and remedied it by the introduction of some such arrangement as that of the detent spring. Thomas with all his ingenuity and cunning overlooked this point, and the chest was allowed to go forth, charged with its deadly contents, and provided with a firing apparatus actuated by what, in fact, through this important oversight, amounted to a hair trigger, which a very slight jar would suffice to release. Such a jar, or something more than a slight jar, the trigger received when the heavy case fell from the hands of the carriers, and the necessary result was an explosion.

I have alluded to this explosion at some length, not merely because of the terrible character of the contemplated crime with which it was immediately connected, and of the interest which naturally attaches to the subject, but because of its possible and

* The lithofracteur in the first experiment was, I believe, partially frozen, at least some of the lithofracteur used in the course of the day's experiments was found to be so, but it was not frozen to the same extent as the nitro-glycerine preparation used at Bremerhaven must certainly have been.

suggested bearing upon the safety of nitro-glycerine preparations in transport; and it is satisfactory that the diligent investigations of the German authorities should have thrown so much valuable light upon the subject. I should also observe that I had the advantage of some conversation with regard to this accident with the German consul at Portsmouth and a German police officer from Bremerhaven on the 19th December, and from these officers I obtained some interesting information, which has been of assistance to me in framing this account of the occurrence.

My visit to Southampton on that occasion was in consequence of the alarm which had been excited by a statement which had obtained currency, to the effect that Thomas had stated before his death that another of his infernal machines was on board the "Salier," and this vessel being in dock at Southampton, the Mayor of that place telegraphed to the Home Office for advice how he should act. In obedience to your instructions, I proceeded on the evening of the 18th December to Southampton to inquire into the matter, and to afford the authorities of the place such assistance as might be in my power. In my report of 20th December 1875, I have dealt fully with this matter, and have stated the grounds upon which it appeared certain that no such case did exist on board the "Salier."

It may be useful if I remark that this accident has not been free from those secondary mischievous effects which appear to be inevitable in all such cases; the effect, on the one hand, of producing an extravagant panic on the subject of explosives generally, and in particular of the class of explosive supposed to be in fault, which has sometimes attained an almost ludicrous development; on the other hand, of giving rise to statements framed with a view to counteracting or modifying the feelings of public alarm, which err just as much in the opposite direction, and are, perhaps, in their exaggerated and misleading assurances of safety, even more to be deplored than the particular evil which they are designed to correct.

Thus, for example, the panic on the subject of nitro-glycerine preparations generally which was excited by the Bremerhaven accident, has led to a statement being publicly and prominently made that dynamite "is quite inexplosive by either friction or per-
"cussion at any temperature, neither will it explode when exposed to fire alone." Both terms of this statement are absolutely incorrect and dangerously misleading. So far from dynamite being "quite inexplosive" by friction or percussion, it may, under certain circumstances, be exploded by these agencies with very great ease; and the following experiments conducted, some by the Committee on guncotton, &c. and some by myself, are conclusive on this point.

(*a.*) A sample of dynamite weighing 30 grains was lightly pressed by hand with a wood former and plunger into a small paper cylinder open at both ends, $\frac{1}{2}$ inch in diameter by $\frac{1}{2}$ inch in depth. This cylinder was laid on the centre of a gun-metal disc, 1 inch in diameter and 0·15 inches in thickness; the gun-metal disc rested on an iron anvil. A second gun-metal disc of similar dimensions was then balanced on the top of the sample, so that it was between the two gun-metal discs. A gun-metal weight shod with iron was then allowed to fall through a tube facing on the upper gun-metal disc. The sample was then crushed between the two discs.

The following results were obtained (among others) with a weight of 5 lbs.:—

Fall of.	Result.	Index No. of Experiments.
36 inches	Partial explosion	74
Do.	Exploded	75
Do.	Do.	76
Do.	Do.	77
Do.	Do.	78
30 inches	Do.	79
Do.	Partial explosion	80
Do.	Exploded	81
Do.	No explosion	82
Do.	Partial explosion	83

Similar results were obtained with lithofracteur.

(*b.*) When the paper cylinder was dispensed with, and the sample of dynamite reduced from 30 grains to 3 grains spread on the surface of the lower disc, explosions were obtained as follows, the weight in all cases being 5 lbs. :—

Fall of.	Result.	Index No. of Experiments.
24½ inches	Exploded	92
Do.	Do.	95
18½ inches	Do.	96
Do.	Do.	103
Do.	Do.	104
Do.	Do.	105
15½ inches	No explosion	100
Do.	Exploded	101
Do.	No explosion	102

Comparing these results with some obtained with cap-composition, it appears that dynamite and lithofracteur, *when disposed in small quantities on hard surfaces, and subjected to percussion*, are actually at least as liable to explosion as cap-composition, with which the following results were obtained :—

Experiments with cap-composition as (*b.*) above :—

Fall of.	Result.	Index No. of Experiments.
24½ inches	Exploded	91
Do.	Do.	112
Do.	No explosion	113
Do.	Exploded	114
18½ inches	No explosion	109
Do.	Do.	110
Do.	Do.	111

(*See Report of Special War Office Committee on Guncotton, &c. of 4th August* 1874.)

It cannot be too generally known that heat far in excess of what is necessary to fire gunpowder and other explosives may be produced by percussion or friction without the presence of any spark, or flame, or of any *visible* form of heat.

As regards the alleged impossibility of exploding dynamite by fire alone, this is sufficiently refuted by an experiment which was made by the War Office Committee on Guncotton, &c., on the 26th June 1872, when 6 cwt. of dynamite, contained in 12 wooden boxes of 56 lbs. each (two of which had the lids off), was placed in a wooden shed with a quantity of shavings and fire applied. The result is thus described in the Committee's report.

" In about three minutes the flame from the shavings appeared to have communicated " with one of the open boxes of dynamite, as at this time a sudden burst of flame, which " no doubt proceeded from the dynamite, was observed. There was another burst of " flame about half-a-minute afterwards. From the first burst of flame the building " continued burning more or less fiercely for about six minutes, when its contents " exploded with great violence. The dynamite was burning very fiercely for about " half-a-minute previous to the explosion. The wooden shed was blown to fragments, " and a crater formed on its site 18 feet in diameter by 2½ feet in depth." (Report of House of Commons Committee on Explosives, 1874, p. 352).

It is somewhat remarkable that this very striking and conclusive experiment should have been overlooked by the gentleman who wrote to the public press that dynamite will not " explode when exposed to fire alone," seeing that he quotes another infinitely less striking and conclusive experiment (as to the non-liability of dynamite to explosion by concussion) which was made on the same day at the same place.

Statements of this description call, I think, in the interests of public safety, for an emphatic contradiction, and I avail myself of this opportunity of demonstrating their incorrectness.

At the same time, the record of Thomas' proceedings furnishes incidentally a sufficient argument against any undue alarm with regard to the transport under ordinary circumstances of nitro-glycerine preparations, in the fact that the particular explosive which ultimately produced (by the agency of the clockwork apparatus) the Bremerhaven disaster had travelled without accident and with no especial precautions to New York and back.

Guncotton accident at Woolwich.

In addition to the accidents and explosions above referred to, one occurred in the Royal Laboratory, Woolwich, on the 24th May, by which two lives were lost, which is worthy of notice. The men were engaged in charging a Palliser shell with damp guncotton, considerable pressure being used in the operation, and the drift, as it appears, which had become bent, having come into contact with the bottom of the shell, sufficient heat was generated by the friction, first, to dry the guncotton in the immediate vicinity, then, to ignite it; and the gas so generated being unable to escape and deriving strength and volume from the ignition of successive particles of guncotton an explosion ultimately necessarily resulted. Such, at least, is the conclusion which those best able to judge, and by whom the subsequent inquiry was conducted, arrived at. This accident having occurred in a Government factory did not come under the official cognizance of this Department, but I notice it because it affords another example of the importance of conducting operations with explosive substances, even although temporarily deprived by damp or otherwise of their more prominent explosive characteristics, with precautions similar to those which would be adopted if the material were in an unqualified explosive or inflammable condition.

Explosion at Toulon.

A very remarkable explosion occurred in July last, in the Pyrotechnic School at Toulon, by which three persons lost their lives. Through the courtesy of Le Vicomte de la Tour du Pin, the Naval Attaché at the French Embassy, I obtained some particulars of this occurrence. It appears that permission had been accorded to a M. Jacquemin to make some experiments with a shell for use on or under water, which was to be exploded by means of a peculiar primer made with phosphide of calcium, a substance which takes fire on contact with water.* It was apparently intended that the priming material should be placed in a hermetically closed bottle or envelope, which was to be broken by contact with the water or otherwise, and the water being admitted would cause the priming to ignite and so explode the shell. It is stated that the particular composition employed by M. Jacquemin was so sensitive to the action of water that the slightest damp would produce ignition "in the tenth part of a second," and it is even asserted that ignition could be produced by the moisture of the hand. M. Jacquemin, it is said, had placed his little capsules of phosphide of calcium in model shells, each containing small charges of dynamite, in the room which had been assigned to him for his experiments, and was about to call the officers who were to witness them, when an explosion occurred, by which the experimenter and two others lost their lives. That an explosion should have occurred with a composition of this highly sensitive character is not at all surprising, and it is perhaps not very profitable to speculate as to the precise manner in which the moisture necessary to ignite the phosphide of calcium had accidentally reached it. Assuming, what almost seems certain, that the capsules were not properly closed, it is easy to believe that a drop of perspiration, a particle of saliva, a little spray blown in at the open window, or even the natural humidity of the atmosphere may have brought about the result, and to one or other of these causes the accident is ascribed by the French officer from whom the above information has been obtained. But the explosion is interesting as an example of the varied nature of the risks involved in the manipulation of explosive substances, of the slight and unsuspected causes from which serious results may proceed, and of the necessity for surrounding all such operations with what, to persons unfamiliar with the subject, may seem almost a superfluity of precautions.

Example of explosion caused by grit.

A similar lesson may be derived from two explosions which occurred in this country, one at Messrs. Wakefield's Gunpowder Factory, Gatebeck, on the 12th October 1875, and one which occurred three days later at Shaw's Firework Factory, Rowley Lepton, near Huddersfield.

In the former of these explosions, two lives were lost by the introduction, as was, I think, clearly shown at the inquest, of some particles of grit on the shoes of the millmen into a mill from the bed of which they were engaged in removing some indurated powder. The presence of this grit, in conjunction with the percussive action of wooden mallets upon the iron powder-encrusted bed of the mill, was, I have no doubt, the cause of the explosion.

Example of explosion from steel tool brought into contact with glazed earthenware dish.

The explosion at Rowley Lepton, by which three persons lost their lives and three more were seriously injured, was plainly caused by a steel file coming into sharp contact with a glazed earthenware dish containing some squib composition. The late owner of the factory had been formally warned by me against admitting iron or steel into his danger buildings; unfortunately this warning was disregarded. The facility with which

* I understand that the use of phosphide of calcium for a similar purpose had been before proposed and experimented with in this country.

sparks can be struck by means of a piece of steel and a piece of glazed earthenware was exhibited by me to the jury; and it ought to be generally known not only that sparks can be readily obtained in this way, but that they can be struck out of two pieces of glazed earthenware, without any steel at all. The use of earthenware vessels in connection with explosives is therefore objectionable.

In this latter accident, it is probable that the effects were augmented by the door of the shed opening inwards, an arrangement which is objectionable as tending to reduce the chances of escape; and it is also undesirable that so many as six persons should work together in one charging shed. An interesting point in connexion with this explosion was the purely local character of the effects. Although the accident was of a sufficiently formidable character to kill three persons and severely injure three others, it did not extend, and was scarcely noticeable beyond the shed in which it occurred, and even the windows of that shed were not all broken. This result affords a striking contrast to that which occurred at the great Birmingham explosion of 1870, when three adjoining shed were swept away and 57 women lost their lives, and testifies to the soundness of the principle for which this Department has strenuously contended, of the sub-division of risk in factories of this sort, by isolating the workers in small groups in detached sheds, and by keeping down the quantity of explosive in each shed to the minimum consistent with the carrying on of the work.

Dangerous shipment of gunpowder.

Before leaving the subject of accidents, I think it well to notice a condition of things in connexion with the shipment of gunpowder disclosed by a report from the captain of the "Altcar," to the Secretary of the Australian and New Zealand Underwriters Association, which serves to illustrate the character and gravity of risks in connexion with the transport of explosives, to which the public have been exposed, and to which, I believe, they would have continued to be exposed, had not the Legislature by the Explosives Act of last session given increased powers of regulating and supervising the traffic in these substances. I cannot do better than quote Captain Harvey's letter.

"Ship "Altcar," Port Chalmers,
"Sir, 17th September 1875.

"I deem it my duty to inform you, for the information of the local insurance "offices, of the dangerous manner in which gunpowder is put on board, and (so called) "stowed in London.

"It is brought alongside, taken in and stowed by the Shippers Agents, the master and "crew of vessel having no control over it in any way.

"Now, the stowing of these parties consists in dropping the various packages into any "opening or crevice that presents itself. The powder in my vessel consisted of "400 barrels and 24 cases, and was placed in main hatchway and on both sides of same, "amongst a general cargo consisting of wines, spirits, oils, paints, matches, rod and bar "iron, &c. &c. The hatches were then secured and nothing more was seen until arrival. "We had the usual amount of heavy weather during the voyage. Upon opening hatches "in presence of Surveyor, we found the powder adrift, and some eight barrels and three "cases smashed. In consequence, daily during our discharge, we have been sweeping and "packing up powder, from amongst the iron, &c., it, the loose powder, having reached "down even to skin of ship. Now any practical man will perceive we have been "momentarily exposed to explosion, more especially from the friction of the iron, and "have been most mercifully spared from an imminent and deadly peril. In carrying "powder for the Government, it is placed in a magazine specially prepared, into which "not a particle of iron is allowed to enter. I begged for London, but was not listened "to by the Charterers. Powder is not allowed to be carried at all in emigrant vessels, "but it is allowed, it seems, to be put on board passenger ships. Surely the lives of "these and of myself, wife, and crew are as dear to us as to emigrants. As the Govern-"ment appear to take no cognizance of these matters, but confine their attention to "frivolous and vexatious rules and regulations, my object is to persuade the insurance "offices to refuse to underwrite a single package in vessels carrying powder, unless in a "proper magazine, which for a few pounds could be erected. . . . . .

. . . . . .

"I am, &c.

The Secretary Underwriters' Association. (Signed) J. W. Harvey. Master of Ship "Altcar."

In another case, the marine surveyor at Port Chalmers states that a vessel (the "Knight of Snowdon") arrived with 200 kegs of gunpowder stowed against a plain $\frac{3}{4}$-inch bulk head that divided off the passengers' berths from the cargo.

It is to be hoped that under the new byelaws now being framed by the different

harbour authorities for confirmation by the Board of Trade under the Explosives Act, a repetition of such a state of things will be impossible.

Example of advantages of good strong powder van for railway use.

Before leaving this branch of the subject, it appears appropriate to refer to an accident which occurred on the North Eastern Railway on the 20th November, which illustrates very happily the advantage of a good strong powder van for railway use. In this case, a portion of a goods train proceeding from Tebay to Kirby Stephen became detached, owing to the engine-driver having slackened speed. Shortly after, the detached portion of the train having considerably increased in speed overtook and came into violent contact with the undetached part of the train, causing one truck to leave the line, and the laden powder van to mount the buffers of another truck. The van which was constructed of iron and contained two tons of powder in casks, sustained no injury, and of the 40 casks of powder, only one was slightly damaged.

Prosecutions during the nine months.

The number of proceedings instituted by this Department during the nine months has been very few, viz. two only, as shown by the Table in Appendix C. This has been due principally to the fact that I was unwilling to recommend proceedings under moribund Acts, except when the case was one which would not justify such abstention, and, moreover, the coming into operation of the new Act would enable many persons whose position under the old Acts was necessarily illegal to place themselves on a lawful footing.

Nitro-glycerine preparations.

No new nitro-glycerine preparations have been licensed during the nine months just passed. Appendix D. gives the names and compositions of those for which licenses have been granted, but of these only Nos. 1 and 2 have, up to this date, come into practical use in this country. One application under this head was made to the Department, but was not persevered with.

The number of licenses of all sorts for the recognised nitro-glycerine preparations granted during the nine months, amounted to 406 against 461 granted in the twelve months ending 31st March 1874, showing a proportionate increase rather than an abatement in the use of this class of explosive.

The total number of licenses of all sorts for nitro-glycerine preparations in force on the 31st December 1875 (making the necessary deductions on account of licenses surrendered or revoked) is 210. (*See* Appendix E.)

It is hardly worth while to repeat in this report the Tables showing the distribution of the various factories and magazines for gunpowder and other explosives which found a place in my Report of last year, because those tables (as then explained) were only approximately correct, because so far as they go they remain substantially the same, and because I hope in my next Report to be able through the machinery of the new Act, to furnish really reliable tables on this subject.

During the past nine months the valuable services of Dr. Dupré, F.R.S., as chemical referee to this Department have been continued, and I gladly avail myself of this opportunity of again recording my considerable obligations to that gentleman for the assistance which he has rendered me, in consultation and otherwise, and for his careful analyses of the various samples of explosives submitted to him by me.

The Explosives Act, 1875.

I now proceed to notice the passing during last session of the Explosives Act, 1875, by which the general Acts which have hitherto regulated the trade in explosive substances are superseded as from this date. This Bill was brought in early in the session and passed the second reading a short time previous to the commencement of the period to which this Report relates, the first reading having been taken on the 25th February, and the second reading on the 15th March. The dates of the subsequent stages of the Bill were as follows :—

Committee on first three clauses	5th April 1875.
„ remaining clauses	12th „ „
Report	26th „ „
Third Reading	28th „ „
Lords.—First Reading	29th „ „
„ Second „	3rd May „
„ Committee	7th „ „
„ Report	10th „ „
„ Third Reading	13th „ „
Lords amendments considered in Commons	20th „ „
Royal Assent given and Bill passed (as 38 Vict. c. 17)	14th June „

You were pleased to appoint Major Ford and myself Government Inspectors under the Act thus passed, by order of 24th August 1875, published in the London Gazette of

7th September 1875. Up to the present time no other Government Inspectors have been appointed under the Act, nor has it been thought necessary for the present to take advantage of those sections of the Act, which authorise the appointment of Railway Inspectors, Board of Trade Inspectors under the Merchant Shipping Act, and Mines Inspectors, to discharge certain duties as Government Inspectors under the Explosives Act.*

The passing of the Bill at once imposed upon this department work of a most anxious and arduous character. By the scheme of the Bill legislation on a large number of details was reserved for regulation by Orders in Council and Orders of the Secretary of State, and in discharge of these delegated duties the preparation of several Orders on a number of important subjects affecting the trade had to be undertaken. The scope and importance of these Orders will be indicated by an enumeration of those which have actually been made, though I am satisfied that no one who was not personally occupied, as Major Ford and myself were for months, in the working out of the details of these Orders can realise the amount of labour and anxiety which their preparation involved.

To that labour I have no hesitation in saying,—and I express Major Ford's opinion as well as my own,—we should have been unequal, had it not been for the patient and ungrudging assistance rendered to us by Mr. Lushington, the Counsel to the Home Office. Of Mr. Lushington's services in connection with the bringing into operation of the Explosives Act, I trust I may be permitted to express my grateful and sincere appreciation; it would be impossible for me to speak of these services too highly; and I am the more anxious to take this opportunity of placing on record my acknowledgment of their value and extent, because, in the first place, I do not know how or where I could otherwise adequately recognise them, and because, in the second place, the character of these services and the circumstances under which they were rendered were such that they would be liable to escape formal recognition altogether, if attention were not specially directed to them by those who like Major Ford and myself alone know the amount and quality of the work which Mr. Lushington has undertaken and accomplished in connection with the almost innumerable details involved in bringing last year's Acts into operation.

The Orders which have been prepared under the Act are 15 in number, as follows:—

Orders in Council.

No. 1. Classification of Explosives.
„ 2. As to Factories for Explosives other than Gunpowder.
„ 3. As to Magazines for Explosives other than Gunpowder, whether with or without Gunpowder.
„ 4. As to Small Firework Factories.
„ 5. As to Stores for Gunpowder exclusively.
„ 6. As to Stores for Mixed Explosives.
„ 7. As to Premises registered for keeping Mixed Explosives.
„ 8. As to keeping Explosive for private use, and not for sale.
„ 9. As to Sale of Explosive.
„ 10. As to Importation of Explosive.
„ 11. As to Notice to be given of Accidents connected with the conveyance of Explosive other than Gunpowder.

Orders of Secretary of State.

„ 1. As to Floating Magazines for Gunpowder.
„ 2. As to Floating Magazines for Explosives other than Gunpowder, whether with or without Gunpowder.
„ 3. As to packing of Explosives other than Gunpowder.
„ 4. As to Conveyance of Explosives on roads and in certain special cases.

Most of these Orders are necessarily exceedingly detailed in their provisions; and some of them run to considerable length, viz., from 3 to 5½ pages, and altogether they extend to about 40 pages, which with an Act of 79 pages (containing 122 sections and 5 schedules) makes, it must be admitted, a formidable mass of legislation. I believe, however, that it can be shown that it would have been impossible to deal with this very comprehensive subject more concisely. Not only are the varieties of explosives which had to be dealt with exceedingly numerous, as is shown by the fact that No. 1 Order in Council mentions between 50 and 60 varieties by way of examples merely of the different classes, but the ramifications of the trade are both numerous and intricate. The manufacturer, the dealer, the retailer, the consumer, the carrier, the importer, all had

* See Sections 58, 59.

to be considered, and the considerations had to be varied and multiplied according to the particular description of trade which was under regulation, and were further complicated by the regard which had to be paid to existing interests. Thus, provisions applicable to gunpowder factories would have been quite unsuitable for factories of guncotton, or dynamite, or fireworks, or percussion caps; the requirements of the mine-owner bore no sort of relation to those of the sportsman; while the carrying trade comprehended on the one hand the wholesale carriage on railways and by ships, and on the other the carriage of small quantities by country carriers throughout the kingdom. Again, the retail trade in explosives obviously could not be controlled by measures similar to those which were applicable to the magazines of large dealers; and in settling the details which should regulate the retail trade it seemed only proper to take into account the various conditions of storage under which such trade might be carried on, and to assign varying quantities according to those conditions. It would no doubt have been comparatively easy to have framed Orders on the rough and ready principle of fixing one quantity of all explosives for the retailer, one for the occupier of a store, and another for the occupier of a magazine. But not only would this have been to perpetuate one of the most salient defects of the old Act, the defect namely of absolute inelasticity, but the result must inevitably have been most injurious either to certain branches of the trade or to the public. For example, if one uniform limit had been assigned for all explosives to be kept on retail premises, without regard to the nature of the explosive, the degree of risk, and the mode of keeping, we should have had, no doubt, a much more simple Order in Council than the present Order No. 7, which regulates the registration of premises for mixed explosives, but we should have purchased this simplicity at the cost either of (*a.*) imperfect security to the public if the limit properly applicable to the least powerful description of explosive and the safest mode of keeping had been applied to *all* explosives and to *all* modes of keeping; or at the cost of (*b.*) those traders who dealt only in the less formidable explosives (such as fireworks or safety cartridges), or who were able to provide isolated and comparatively safe places of storage, if the limit properly applicable only to the most powerful explosives and the least safe mode of keeping had been universally applied. This consideration prevailed to induce me to recommend that in the interests alike of the public and the traders we should differentiate to meet the varying requirements and circumstances of the trade, believing that the evil of some apparent want of simplicity and conciseness in the Orders would be very much more than counterbalanced by the substantial advantages which the trade and the public would derive from such a mode of treatment; and, further, while the evil of want of brevity and simplicity in the Orders would tend to become daily less of an evil and inconvenience as the Orders became better understood, the advantages would be of a permanent character.

To the application of this principle to the whole of the legislation on this subject may be traced much of the apparent complexity of the Act and of the Orders made thereunder; indeed the various expedients which were resorted to in the preparation of the Act and Orders, with the view to obtaining as simple and short a measure as possible, all resulted more or less in failure, and it became apparent as successive drafts were prepared that two extremes presented themselves, viz., incomplete, unsatisfactory, inelastic legislation on the one hand, and, on the other, a more or less intricate and bulky statute, comprehending the various points indicated by the Parliamentary Committee on Explosive Substances.

Again, any attempt to fix hard and fast statutory lines on a subject where elasticity was indispensable would have been extremely objectionable, while it seemed scarcely less objectionable to go to the other extreme and draw, so to speak, a blank Bill which should throw the whole regulation of the subject into the hands of the Secretary of State, or other public officer. As far as possible this difficulty has been solved by fixing the main lines by statute, and by leaving to the executive the regulation of minor details and certain powers of modifying some of the statutory provisions. This arrangement, while it simplified and shortened the Act of Parliament, entailed a proportionally formidable supplement in the shape of the various Orders above-mentioned, but it at any rate secured what I have always held to be of primary importance in a measure of this character, viz., the elasticity indispensable for the adaptation of the legislative provisions to the continually fluctuatingrequirements of the trades affected.

In order to facilitate the working of the Act and Orders it appeared desirable to Mr. Lushington, Major Ford, and myself, that we should prepare abstracts of the provisions of the Act as they affect different branches of the trade. Accordingly 18 different abstracts were prepared relating to different branches of the subject. The subjects of these abstracts will be found in Appendix F.

In addition a vast number of forms had to be prepared: forms of application for licenses of different sorts, and for continuing certificates, forms of notice to register premises, and forms of licenses and registers. A list of the documents prepared under the new Act is given in Appendix F.; they amount to 54 in number, and when to these I add a not inconsiderable number of forms of various sorts which have had to be prepared for office use, I shall, I think, have sufficiently justified the statement with which I set out that the amount of labour entailed upon this Department in connexion with the elaboration of the necessary machinery for bringing the Explosive Act of last session into operation has been of a most arduous character, occupying all our time and severely taxing all our energies. And it is easy to foresee that this exceptionally heavy pressure of work does not end with the preparation of the necessary orders and forms.

The actual working of the machinery thus prepared is now before us, and the labour which this will involve, especially during the first six months, must obviously be excessive.

But neither the labour which has already had to be bestowed nor that which is yet before us will be grudged by either Major Ford or myself if we can have the satisfaction of realising that the outcome is a vast increase of public safety, and a removal of the more salient of those dangerous risks by which the manufacture, storage, and transport of explosives have hitherto been commonly attended.

It may be useful to mention that certain of the recommendations to Her Majesty in Council, and certain of the Orders of the Secretary of State, were required by the Act to be published before being finally settled, for the information of persons interested.

Accordingly the drafts of the recommendations to Her Majesty, which ultimately were embodied in the Orders in Council, Nos. 4, 5, and 6, and the drafts of the Orders of the Secretary of State, Nos. 3 and 4, were published in the London Gazette of the 8th October last, and in the Dublin and Edinburgh Gazettes of about the same date; and with a view of giving greater publicity to these drafts, copies were sent on the 12th October to the following:—

England and Wales.

Clerks of Peace of Counties.
Town Clerks of Boroughs having Quarter Sessions.
The Lord Mayor of London.
The Metropolitan Board of Works.
The Commissioner of Metropolitan Police.

Scotland.

Clerks of the Peace of Counties.
Clerks of the Peace of Royal and Parliamentary Boroughs.

Ireland.

Clerks of the Peace of Counties.
Urban Sanitary Authorities.
The Lord Mayor of Dublin.
The Inspector General of the Royal Irish Constabulary.
The Chief Commissioner of the Dublin Metropolitan Police.
The Commissioners of Public Works, Custom House, Dublin.

The Harbour Authorities.
Certain Trades } interested.
Certain Carriers }

The Admiralty.
The Board of Trade.
The War Office.
The Office of Works, &c.
The Office of Woods, &c.

The drafts were accompanied by a circular informing the authorities addressed that they were sent for such observations as they might have to offer, and giving up to the 15th November for these observations to be sent in.

Advertisements were also inserted in 19 leading newspapers in England, Scotland, and Ireland calling attention to the publication of the proposed Orders in the Gazette. All

observations which were received were most carefully considered, and every criticism which it was thought could be admitted with due regard to the interests of the trade and public safety was accepted, and the details of the proposed Orders were modified accordingly. Except in the case of the Order of the Secretary of State as to Carriage of Explosives (Order, No. 4), the criticisms were not numerous, and in the case of this Order the criticisms proceeded almost entirely from the gunpowder manufacturers, whose representations, where they took a definite form, received the most patient consideration, and were met as far as possible. I may remind you, Sir, that this particular Order occupied your very special personal attention, and that considerable changes were made in it, and every provision which did not seem to be justified by the requirements of public safety was rigorously excised. Ultimately the whole of the Orders were settled, and (with the exception of Order in Council, No. 1, which had been previously published in the London Gazette of 10th August) appeared in the London Gazette of 30th November, and in the Edinburgh and Dublin Gazettes of about the same date. Again, advertisements were inserted in a number of the leading papers calling attention to the publication of these Orders, and a list of them, together with a list of all documents published under the Explosives Act, was on 9th December sent to every local authority under the Act, 2,314 in number, and to the Public Departments concerned.

Thus the necessary arrangements for bringing the Act into operation on this day, were, as far as this Department was concerned, completed by the 9th December. The Board of Trade had, early in the autumn, issued notices to the railways, canal and harbour authorities, calling on them to frame byelaws under sections 34 and 35 of the Act.

Regulations as to "single packages" for conveyance of gunpowder.

There remains only to be noticed an Order which, in virtue of the powers conferred on me as Government Inspector under the 33rd section of the Act, I have thought it my duty to make on the subject of packages for gunpowder. In the case of other explosives (with few exceptions) double packages have been required, and in the case of nitro-glycerine preparations these packages will have to be waterproof. It was represented that to insist upon the invariable use of double packages for gunpowder would involve a serious dislocation of the trade, and accordingly the expedient of single packages to be approved by the Government Inspector was suggested (originally, I believe, by the trade themselves) as a solution of the difficulty, with a reservation of the right of the trade to use double packages if they preferred. Accordingly, in section 33 it is directed that if gunpowder exceeding 5 lbs. is packed for conveyance in a "single package" (as distinguished from a "double package" as defined by the same section), such single package shall be "a box, barrel, or case of such strength, "construction, and character as may be for the time being approved by the Govern- "ment Inspector as being of such strength, construction, and character that it will not "be broken or accidentally opened, or become defective or insecure whilst being "conveyed, and will not allow the gunpowder to escape." On considering how best to discharge the duty imposed upon me by this section, a duty the full responsibility and importance of which were impressed upon me by my knowledge, on the one hand, of the risks attending the use of bad packages, and of the unsatisfactory character of some of the packages which have hitherto been employed, and, on the other, of the extent to which the interests of the trade might be affected by any unduly restrictive regulations, it appeared to me important to remove the question of the approval of this or that package as far as possible from the region of what might be considered caprice or fancy, and to reduce it to a definite standard or test, which standard or test should bear a direct relation to the sort of risks to which packages containing gunpowder were liable to be exposed in transport. I did not desire or think it necessary to test sample barrels to destruction, but only to estimate approximately their fitness to endure the hazards of ordinary transport. Those hazards appeared to me to fall under the following main heads :—

(*a.*) Exposure to alterations of temperature and atmospheric changes.
(*b.*) Falls and blows.
(*c.*) Shaking and jolting.

As regards (*a.*) it is clear that unless a barrel is made of properly seasoned wood, or unless it is free from holes and dangerous knots, and other defects which are likely to impair its strength or integrity of structure, it must be unsuitable for the conveyance of gunpowder, which, as a leading gunpowder firm once observed to me as a partial excuse for an observed leakage from some of their barrels, is sometimes "as fine as the finest sea sand," and which is always more or less liable to "dust" in transport, and so to work through any interstices which may arise.

(*b.*) As regards falls and blows, it is also clear that a barrel is liable to fall from a cart or waggon or into a boat or the hold of a ship, or from the top of a pile in a magazine, or to have another barrel fall on to it,* and if it is not of a character which will enable it to withstand such falls without breaking and spilling the powder it is not a safe barrel.

(*c.*) Lastly, barrels travelling in all sorts of conveyances across rough country roads and elsewhere are exposed to a good deal of shaking and jolting, which they ought to be able to endure without parting with any of their contents.

Accordingly, I proceeded to devise a set of tests which would exhibit the character of the barrel under these different heads, and for this purpose, in conjunction with the Superintendent of the Royal Laboratory, I carried out a number of experiments with Government barrels, and ultimately assigned a standard test far below that which the Government barrels used in my experiments had proved themselves capable of satisfying.† The test originally proposed by me (*see* Appendix G.) underwent some modification in view of the representations made to me by certain members of the trade, and after consultation with the authorities of the Royal Laboratory and Royal Carriage Departments, and as finally settled will be found in Appendix G.

The standard of strength which I have deemed it my duty to assign has, I am aware, been sharply criticised and pronounced excessive by some of the gunpowder manufacturers; but I venture confidently to believe that it will not generally be so regarded, especially when it is recollected what a serious risk is entailed by the presence of even a single weak or defective barrel in the midst of a cargo,‡ and I am decidedly of opinion that any lower standard would have failed to afford that increased measure of safety in the transport of powder which it was one of the principal objects of the Explosives Act to afford. The recognition of the necessity for improvement in some of the barrels which have hitherto been employed in the conveyance of gunpowder and of the reality of the risk to which the use of such barrels has given rise is based not merely on the observation and experience of this Department, but rests in some degree upon the public admissions of members of the trade; and I do not doubt it will hereafter be acknowledged as not the least considerable of the public advantages conferred by the new Act that it tends to raise appreciably the strength and quality of the packages which have hitherto been frequently employed, and so to eliminate a risk of a most important character, and render proportionally safer the conveyance of gunpowder whether in ships or on railway, road or canal.

And it should always be borne in mind in considering this matter that it is in the elimination of the transport risks that the public are specially interested, seeing that an accident during transport, which may occur, as did the Regent's Park explosion of 1874, in the midst of houses, is likely to be attended with far more serious general consequences than the explosion of a well isolated magazine or of one of the buildings of a powder factory.

I have, &c.

V. D. Majendie, Major R.A.,
Her Majesty's Inspector of Explosives.

The Right Honourable
The Secretary of State,
Home Department, Whitehall.

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* Examples of barrels having, in practice, been exposed and succumbed to these different risks could be cited.

† It is proper to notice that subsequently a Government barrel failed under one of these tests—the test of dropping it four feet on to its bilge. In all my experiments no Government barrel had failed in this way. Subsequent inquiries established that this particular barrel was made of *Memel* staves, and was not therefore one of the regular Government barrels (which are made of Quebec oak), but was one of a lot which, in default of any Quebec oak, and at a moment of pressure, had to be made of this inferior (though more costly) timber. This failure disclosed to my mind the absolute necessity of either prohibiting the use of Memel staves for the future, or of requiring barrels made of such staves to be made of greater thickness than the oak barrel, or of fitting all such barrels with an inner lining; and I have no doubt that this conclusion will commend itself to the minds of the War Office authorities who are responsible for the Government barrels, and who in the case of powder not conveyed under War Office superintendence (*see* sec. 97) will be required by the Act to conform to the regulations and standard adopted for the powder and packages of private makers.

‡ The leakage of even a few grains of powder places the whole cargo at the mercy of a single spark which may be accidentally struck, or of the accidental ignition by whatever cause of a single grain.

APPENDIX.

APPENDIX A.

ACCIDENTS by FIRE or EXPLOSION which have come under the notice of the Home Office during the nine months ending 31st December 1875.

Index No.	Date of Accident.	Nature of Explosive.	Where accident occurred.	Killed.	Injured.
	1875.				
1	19th April -	Gunpowder - -	Kersley - - - -	—	3
2	6th June -	Patent Cotton Gunpowder.	Factory of Patent Cotton Gunpowder Company, Oare, Faversham.	—	—
3	30th June -	Gunpowder - -	New Sedgwick Gunpowder Factory - -	5	—
4	10th July -	Do. - -	Messrs. Wakefield and Company's Gunpowder Factory, Gatebeck.	—	—
5	16th July -	Do. - -	Messrs. Curtis's and Harvey's Gunpowder Factory, Hounslow.	—	—
6	24th September	Do. - -	Do. Do. Do. -	—	—
7	5th October -	Do. - -	Radford, Woodhouse, near Nottingham -	1	—
8	12th October -	Do. - -	Messrs. Wakefield and Company's Gunpowder Factory, Gatebeck.	2	—
9	15th October -	Fireworks - -	Shaw's Firework Factory, Rowley Lepton -	3	3
10	5th November -	Gunpowder - -	Nottingham - - - - -	3	4
11	17th November -	Dynamite - -	Llanbedrog Quarry, Pwllheli - -	1	3
			Total - - -	15	13

APPENDIX B.

EXTRACT from REPORT of Mr. WARD, H.M.'s CONSUL at BREMERHAVEN, respecting the EXTENT of DAMAGE occasioned by the EXPLOSION.

The degree of the momentary pressure caused through the explosion of the 350 kilos of *lithofracteur* at Bremerhaven, December 11th 1875, has been estimated by calculating the degree of resisting power contained in the pieces of iron and other metals which were torn off certain parts of the steamer, "Mosel" (the vessel lying alongside of the quay at the time of the explosion), and is given at 360,000 kilos per square centimetre, or at the rate of 300,000 degrees of atmospheric pressure.

In view of such a colossal force, of which it is well nigh impossible to convey any approximative conception to the mind, few people will be surprised to hear that the effects of the explosion manifested themselves in a most extraordinary, and in many instances in a quite incomprehensible manner.

It would probably be considered superfluous for me to offer a detailed description of the manifold cases showing the varied character of those effects. It may suffice for this statement to mention that the large hole which was made in the quay at the spot where the fatal cask exploded measured $9\frac{1}{2}$ metres in circumference, and $2\frac{32}{100}$ metres in depth, and that the solid pavement with the soil beneath it was pressed *downwards*, whilst neither stones nor sand were thrown up upon the sides of the hole. On the other hand, most of the human beings, the cart containing the cask, with the horse attached to it, and all articles on the quay, as well as many parts of the decks of the steamers ("Mosel" and "Simoon" tug-boat) lying alongside, were carried up into the air and thrown to more

or less considerable distances, torn to pieces, shreds, or atoms, and destroying or injuring on their passage other human lives, buildings, ships, &c. which were in the vicinity of the spot.

The most serious effects of the explosion were experienced within a circle, the radius of which is given at 750 metres, but window panes and other fragile materials, offering large surfaces of slight resisting power, were broken to pieces at greater distances, and where no obstacles intervened the atmospheric pressure destroyed glass and similar articles in localities 1,400 metres distant from the spot of the explosion.

The general concussion of the soil in nearly every portion of the town of Bremerhaven, and of the neighbouring towns of Gristmünde and Lehe was so violent, that many persons sitting in their rooms were thrown from their seats, and in innumerable shops, &c. light articles, such as glass and crockery, fell from the shelves where they had been standing, whilst walls were cracked and stoves were thrown down.

Trustworthy persons report that the effects of the sudden atmospheric pressure were observed in a few instances at a distance of 9½ English miles (from the Bremerhaven quay) through the sudden opening of doors and windows, and the falling of piles of wood.

The detonation was, according to reliable sources, heard in parts of Holstein and Lauenberg, *i.e.*, at a distance of at least 55 English miles from Bremerhaven.

APPENDIX C.

Return of Proceedings and Convictions, &c.

No.	Date.	Defendants.	Offence.	Act under which Proceedings were instituted.	Where tried.	Result.	Remarks.
1	1/4/75 15/4/75	Geo. Bryant -	Illegal importation of a certain nitro-glycerine preparation not authorised by his license.	Nitro-glycerine Act	Rochford -	Convicted and Fined 20*l.* Costs 40*l.*	
2	1/4/75	British Dynamite Company.	Violation of certain conditions of their license	Nitro-glycerine Act	Rochford -	Convicted and Fined 25*l.*	No costs.

APPENDIX D.

Names and Compositions of Nitro-glycerine Preparations for which Licenses have been granted, up to 31st December 1875.

I. *Dynamite No.* 1, consisting of not more than 75 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 25 parts by weight of an infusorial earth, known as "kieselguhr," and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

II. *Dynamite No.* 2, consisting of not more than 18 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 82 parts by weight of a pulverized preparation, composed of nitrate of potash 71 parts, charcoal not less than 10 parts, and purified paraffin (or ozokerit) 1 part, (*or* nitrate of potash 72 parts and charcoal not less than 10 parts,) by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

III. *Horsley's Blasting Powder A*, consisting of not more than 25 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 75 parts of a pulverized or granulated preparation, composed of chlorate of potash 3 parts and nutgalls one part by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

IV. *Horsley's Blasting Powder B*, consisting of not more than 25 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 75 parts by weight of a pulverized or granulated preparation, composed of chlorate of potash 6 parts, nutgalls 1 part, and charcoal 1 part by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

V. *Brain's Blasting Powder*, consisting of not more than 40 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 60 parts by weight of a pulverized preparation composed of 2 parts by weight of charcoal and fine sawdust, and 3 parts by weight of a mixture of nitrate and chlorate of potash, of which not more than one half is chlorate of potash, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

VI. *Lithofracteur*, consisting of not more than 55 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 45 parts by weight of a pulverized preparation, consisting of 1 part by weight of charcoal, bran, and sawdust (*or* of any one or more of the same), 3½ parts by weight of

an infusorial earth known as kieselguhr, 2½ parts by weight of nitrate of baryta and bicarbonate of soda (*or* of either of them), ½ part by weight of sulphur and manganese (*or* of either of them), and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

Approximate Composition of Foregoing Preparations.

No.	Nitro-glycerine Preparation.	Ingredients.			Proportions between Absorbent and Nitro-glycerine.			Remarks.
		Nitro-glycerine.	Kieselguhr.	Other Absorbents.	Nitro-glycerine.	Kieselguhr.	Other Absorbents.	
		Parts.	Parts.	Parts.	Parts.	Parts.	Parts.	
1	Dynamite, No. 1 - -	75	25	—	3	1	—	Or ⅓ Kieselguhr to 1 Nitro-glycerine.
2	Dynamite, No. 2 - -	18	—	82	3	—	12	Or 4 Absorbent to 1 Nitro-glycerine.
3	Horsley's Blasting Powder, A.	25	—	75	3	—	9	Or 3 Absorbent to 1 Nitro-glycerine.
4	Horsley's Blasting Powder, B.	25	—	75	3	—	9	Or 3 Absorbent to 1 Nitro-glycerine.
5	Brain's Blasting Powder -	40	—	60	3	—	4½	Or 1½ Absorbent to 1 Nitro-glycerine.
6	Lithofracteur - -	55	21	24	3	1	See Remarks.	Or ⅓ Kieselguhr to 1 Nitro-glycerine (leaving ⅓ parts of Kieselguhr, and 1⅓ parts of other Absorbents, over and above).

APPENDIX (E.)

Nitro-glycerine Preparations.

Licenses to "Store, Use, Sell, and Transport," issued, surrendered, revoked, and in force, with Magazines visited up to 31st December 1875.

Counties.	Licenses issued up to 31/12/75.	Licenses revoked and surrendered up to 31/12/75.	Licenses in force, 31/12/75.	Magazines visited up to 31/12/75.	Remarks.
ENGLAND AND WALES.					
Anglesey - -	—	—	—	—	
Bedford - -	1	—	1	—	
Berkshire - -	1	—	1	—	
Brecon - -	2	—	2	—	
Buckingham - -	—	—	—	—	
Cambridge - -	—	—	—	—	
Cardigan - -	9	—	9	1	
Carmarthen - -	4	—	4	—	
Carnarvon - -	51	4	47	11	
Cheshire - -	5	—	5	—	
Cornwall - -	108	4	104	31	
Cumberland - -	66	3	63	27	
Denbigh - -	2	—	2	—	
Derby - -	6	—	6	1	
Devon - -	24	1	23	6	
Dorset - -	1	—	1	—	
Durham - -	21	—	21	3	
Essex - -	2	—	2	1	
Flint - -	8	—	8	3	
Glamorgan - -	52	5	47	8	
Gloucester - -	35	9	26	6	
Hampshire - -	1	—	1	—	

Counties.	Licenses issued up to 31/12/75.	Licenses revoked and surrendered up to 31/12/75.	Licenses in force, 31/12/75.	Magazines visited up to 31/12/75.	Remarks.
Hereford	—	—	—	—	
Hertford	1	—	1	—	
Huntingdon	—	—	—	—	
Kent	3	1	2	2	
Lancashire	61	6	55	10	
Leicester	7	1	6	5	
Lincoln	5	1	4	1	
Merioneth	10	—	10	—	
Middlesex	—	—	—	—	
Monmouth	18	—	18	1	
Montgomery	5	—	5	5	
Norfolk	3	—	3	1	
Northampton	—	—	—	—	
Northumberland	12	2	10	1	
Nottingham	4	—	4	—	
Oxford	—	—	—	—	
Pembroke	—	—	—	—	
Radnor	—	—	—	—	
Rutland	—	—	—	—	
Shropshire	4	—	4	—	
Somerset	32	2	30	10	
Stafford	33	1	32	4	
Suffolk	—	—	—	—	
Surrey	2	—	2	—	
Sussex	1	—	1	—	
Warwick	1	—	1	—	
Westmoreland	7	—	7	1	
Wilts	3	—	3	—	
Worcester	2	—	2	—	
York	91	13	78	9	
Isle of Man	3	3	—	—	
Totals	707	56	651	148	
SCOTLAND.					
Aberdeen	44	—	44	—	
Argyll	17	—	17	—	
Ayr	37	—	37	6	
Banff	6	—	6	—	
Berwick	—	—	—	—	
Bute	1	1	—	—	
Caithness	1	—	1	—	
Clackmannan	—	—	—	—	
Cromarty	—	—	—	—	
Dumbarton	9	—	9	—	
Dumfries	3	—	3	—	
Edinburgh	21	1	20	1	
Elgin	1	—	1	—	
Fife	23	—	23	1	
Forfar	15	—	15	—	
Haddington	8	—	8	—	
Inverness	3	—	3	—	
Kincardine	—	—	—	—	
Kinross	—	—	—	—	
Kircudbright	4	—	4	—	
Lanark	75	4	71	4	
Linlithgow	10	—	10	1	
Nairn	2	—	2	—	
Orkney and Shetland	3	—	3	—	
Peebles	3	—	3	—	
Perth	23	—	23	—	
Renfrew	12	2	10	1	
Ross	4	—	4	—	
Roxburgh	3	—	3	—	
Selkirk	—	—	—	—	
Stirling	16	—	16	—	
Sutherland	3	1	2	—	
Wigton	—	—	—	—	
Totals	347	9	338	14	

Counties.	Licenses issued up to 31/12/75.	Licenses revoked and surrendered up to 31/12/75.	Licenses in force, 31/12/75.	Magazines visited up to 31/12/75.	Remarks.
IRELAND.					
Antrim	31	3	28	5	
Armagh	3	—	3	—	
Carlow	2	—	2	—	
Cavan	—	—	—	—	
Clare	5	—	5	—	
Cork	14	2	12	3	
Donegal	9	—	9	—	
Down	17	—	17	2	
Dublin	3	—	3	—	
Fermanagh	1	—	1	—	
Galway	12	—	12	1	
Kerry	2	—	2	—	
Kildare	2	—	2	—	
Kilkenny	3	—	3	—	
King's County	2	—	2	—	
Leitrim	—	—	—	—	
Limerick	1	—	1	—	
Londonderry	1	—	1	—	
Longford	—	—	—	—	
Louth	2	1	1	—	
Mayo	1	—	1	—	
Meath	2	—	2	—	
Monaghan	2	—	2	—	
Queen's County	1	—	1	—	
Roscommon	2	—	2	—	
Sligo	—	—	—	—	
Tipperary	4	—	4	—	
Tyrone	10	—	10	2	
Waterford	4	—	4	—	
Westmeath	1	—	1	—	
Wexford	5	—	5	—	
Wicklow	17	1	16	—	
Totals	159	7	152	13	
SUMMARY.					
England and Wales	707	56	651	148	
Scotland	347	9	338	14	
Ireland	159	7	152	13	
Grand Totals	1,213[h]	72[i]	1,141[k]	175	

[h] Viz., 809 General, and 404 Special.
[i] Viz., 42 General, and 30 Special.
[k] Viz., 767 General, and 374 Special.

Nitro-glycerine Preparations.

Total Licenses of all sorts issued to 31st December 1875.

—	To Store, Use, Sell, and Transport.		Special to Transport.	Special to Import.	Special to Export.	Special to Manufacture.	Special to Use and Transport.	Total.	Remarks.
	General.	Special.							
Number issued	809	404	23	12	11	5	24	1,288	
„ revoked, surrendered, cancelled, or expired	42	30	2	1	1	2	—	78	
„ in force, 31/12/75	767*	374*	21	11	10	3	24	1,210	

* Total 1,141 Licenses to store, use, sell, and transport, of which 651 are in England and Wales, 338 in Scotland, and 152 in Ireland.

APPENDIX F.

List of Documents under the Explosives Act, 1875.

Orders in Council.

No. 1. Classification of Explosives.
„ 2. As to Factories for Explosives other than Gunpowder.
„ 3. As to Magazines for Explosives other than Gunpowder, whether with or without Gunpowder.
„ 4. As to Small Firework Factories.
„ 5. As to Stores for Gunpowder exclusively.
„ 6. As to Stores for Mixed Explosives.
„ 7. As to Premises registered for keeping Mixed Explosives.
„ 8. As to keeping Explosive for private use, and not for sale.
„ 9. As to Sale of Explosive.
„ 10. As to Importation of Explosive.
„ 11. As to Notice to be given of Accidents connected with the conveyance of Explosive other than Gunpowder.

Orders of Secretary of State.

„ 1. As to Floating Magazines for Gunpowder.
„ 2. As to Floating Magazines for Explosives other than Gunpowder, whether with or without Gunpowder.
„ 3. As to packing of Explosives other than Gunpowder.
„ 4. As to Conveyance of Explosives on roads and in certain special cases.
Notice as to Fees payable for Licenses.

Abstracts of portions of Act (including Orders in Council and Orders of Secretary of State).

1. As to Duties of Local Authority.
2. As to Factories for Gunpowder under License.
3. As to Factories for Gunpowder under Continuing Certificate.
4. As to Factories for Explosives other than Gunpowder under License.
5. As to Factories for Explosives other than Gunpowder under Continuing Certificate.
6. As to Magazines for Gunpowder under License.
7. As to Magazines for Gunpowder under Continuing Certificate.
8. As to Magazines for Explosives other than Gunpowder, whether with or without Gunpowder, under License.
9. As to Magazines for Explosives other than Gunpowder under Continuing Certificate.
10. As to Stores for Gunpowder under License.
11. As to Stores for Gunpowder under Continuing Certificate.
12. As to Stores for Mixed Explosives under License.
13. As to Registered Premises for Gunpowder.
14. As to Registered Premises for Mixed Explosives.
15. As to Importation, Packing, and Conveyance of Explosive.
16. Index to the Act (including Orders in Council and Orders of Secretary of State).
17. As to Small Firework Factories.
18. Memorandum as to the keeping of Explosives.

Forms of Application to Secretary of State.

Form A. For a License for a Factory for Gunpowder or other Explosive.
„ B. For a License for a Magazine for Gunpowder or other Explosive.
„ C. For an Amending License for a Factory for Gunpowder or other Explosive.
„ D. For an Amending License for a Magazine for Gunpowder or other Explosive.
„ E. For a License to Import Explosive.
„ F. For a Continuing Certificate for a Factory for Gunpowder or other Explosive.
„ G. For a Continuing Certificate for a Magazine for Gunpowder or other Explosive.
„ H. For Consent of Secretary of State to the use of a Room or Workshop in connexion with a Magazine under Continuing Certificate.
„ I. For Consent of Secretary of State to the use of a Room or Workshop in connexion with a Store for Gunpowder under Continuing Certificate.

Forms of Application to Local Authority.

Form 1. For a License for a Store for Gunpowder or Mixed Explosives.
„ 2. For a License for a Small Firework Factory.
„ 3. For a Continuing Certificate for a Store of Gunpowder.
„ 4. Notice to register Premises for keeping Gunpowder or Mixed Explosives.

Forms of Licenses to be granted by Local Authority.

Form I. Store License.
„ II. Small Firework Factory License.
„ III. Continuing Certificate for Gunpowder Store.

Forms of Registers for the use of Local Authority.

Form 1. Register of Store Licenses.
„ 2. Register of Licenses for small Firework Factories.
„ 3. Register of Continuing Certificates for Stores for Gunpowder.
„ 4. Register of Registered Premises.

The foregoing documents have been printed for Her Majesty's Stationery Office and are sold by W. Clowes & Sons, 13, Charing-cross; Harrison & Sons, 59, Pall Mall; W. H. Allen & Co., 13, Waterloo Place; W. Mitchell, 39, Charing-cross; Longman & Co., Paternoster Row; Trübner & Co., 57 & 59, Ludgate-hill; Stanford, Charing-cross; H. S. King & Co., 65, Cornhill; Knight & Co., 90, Fleet-street; Ford & Tilt, 52, Long Acre; Shaw & Sons, Fetter-lane and Crane-court, E.C.; and Waterlow & Sons, 24 and 25, Birchin-lane, E.C., and 49, Parliament-street, S.W.: also by Griffin & Co., The Hard, Portsea; A. & C. Black, Edinburgh; Alex. Thom, Abbey-street, and E. Ponsonby, Grafton-street, Dublin.

APPENDIX G.

Standard of Strength and Construction required to be observed in Single Packages for the Conveyance of Gunpowder.

Tests originally proposed.

In accordance with section 33 of the Explosives Act, 1875 (38 Vict. c. 17.), which directs that when gunpowder exceeding 5 lbs. in amount is packed in "a single package," such single package "shall "be a box, barrel, or case of such strength, construction, and character as may be for the time being "approved by the Government Inspector as being of such strength, construction, and character that "it will not be broken or accidentally opened, or become defective or insecure, whilst being con-"veyed, and will not allow the gunpowder to escape," it will be required that any box, barrel, or case intended to be used as a single package for the conveyance of gunpowder above 5 lbs. shall, if made of wood, be of the following strength, construction and character:

1. The box, barrel, or case will be required to be free from worm holes, pin holes, splits, knots, flaws, and other defects.
2. The box, barrel, or case will be required to be securely fastened.
3. The box, barrel, or case when filled with a fine material to represent gunpowder, and of about the same specific gravity (such as coal dust and iron filings) will be required to be capable of undergoing the following tests without allowing any of the contained material to escape:
   (*a.*) The box, barrel, or case must be capable of sustaining exposure for 60 hours to a temperature of 100° Fahrenheit.
   (*b.*) The box, barrel, or case must be capable of being jolted on end for four hours in an eccentric, or other similar, machine making from seventy to one hundred revolutions a minute, and having a lift and fall of three inches.
   (*c.*) The box, barrel, or case must be capable of being jolted in the same machine and to the same extent on its bilge and side.
   (*d.*) The box, barrel, or case must be capable of being dropped once on its bilge or side from a height of four feet on to an ordinary hard road.
   (*e.*) The box, barrel, or case must be capable of being dropped from a height of four feet on to its end on an ordinary hard road.
   (*f.*) The box, barrel, or case, when lying on its bilge or side, must be capable of sustaining for 48 hours, at a temperature of 80° Fahrenheit, a weight of ten hundredweight.
   (*g.*) The box, barrel, or case must be capable of sustaining a blow on the head or any other part thereof, from a box, barrel, or case of the same size, and filled with the same weight, falling freely through a space of one foot.

In the case of a single package proposed to be made of any other material than wood, such additions to or modifications in the foregoing requirements will be made as in the opinion of the Government Inspector shall be necessary to determine the suitability of such package.

Tests as finally settled.

In accordance with section 33 of the Explosives Act, 1875 (38 Vict. c. 17.), which directs that when gunpowder is packed for conveyance, "the gunpowder, if exceeding five pounds in amount, shall be "contained either in a single package or a double package," and that "a single package shall be a "box, barrel, or case of such strength, construction, and character as may be for the time being

" approved by the Government inspector as being of such strength, construction, and character that it " will not be broken or accidentally opened, or become defective or insecure, whilst being conveyed, and " will not allow the gunpowder to escape," notice is hereby given that every box, barrel, or case intended to be used as such single package for the conveyance of gunpowder will, if made of wood, be required to be of the following strength, construction, and character:

1. The box, barrel, or case must be free from through worm holes and pin holes, from dead knots, from live knots the diameter of which in the case of a knot in the stave of a barrel exceeds one-fifth the width of such stave, and in the case of a knot in the head of a barrel or in the side or end of a box or case exceeds one inch, and from splits, flaws, and other defects; and
2. The box, barrel, or case must be securely fastened.
3. The box, barrel, or case when filled with a fine material to represent gunpowder, and of about the same specific gravity (such as coal dust and iron filings), must be capable of undergoing the whole of the following tests without allowing any of the contained material to escape:
   - (*a.*) The box, barrel, or case must be capable of sustaining exposure for six days to a temperature, if made with staves of oak, ash, or beech, of 75° Fahrenheit, and if made with staves of pine, sycamore, birch, lime, poplar, or other light woods of 70° Fahrenheit; and
   - (*b.*) The box, barrel, or case must be capable of being jolted on end for half-an-hour in an eccentric or other similar machine making from about seventy to one hundred revolutions a minute, and having a lift and fall of three inches; and
   - (*c.*) The box, barrel, or case must be capable of being jolted in the same machine and to the same extent on its bilge or side; and
   - (*d.*) The box, barrel, or case must be capable of being dropped once on its bilge or side from a height of four feet on to an ordinary hard road; and
   - (*e.*) The box, barrel, or case must be capable of being dropped from a height of four feet on to its end on an ordinary hard road; and
   - (*f.*) The box, barrel, or case, when lying on its bilge side, must be capable of sustaining for 48 hours at ordinary temperatures a weight of ten hundred weight; and
   - (*g.*) The box, barrel, or case must be capable of sustaining a blow on the head or any other part from a box, barrel, or case of the same size, and filled with about the same weight of material, falling freely through a space not exceeding one foot.

In the case of a single package proposed to be made of any other material than wood, such additions to or modifications in the foregoing requirements will be made as in the opinion of the Government Inspector may be necessary to determine the suitability of such package.

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REPORT

TO

THE RIGHT HON. THE SECRETARY OF STATE FOR THE HOME DEPARTMENT,

ON

The Circumstances attending an Explosion of Dynamite at Cymmer, Glamorganshire, on 21st April 1876;

BY

MAJOR V. D. MAJENDIE, R.A.,

H.M. INSPECTOR OF EXPLOSIVES.

Presented to both Houses of Parliament by Command of Her Majesty.

SIR, Home Office, 24th May 1876.

I HAVE the honour to report that in obedience to your Order of 6th instant, made under the 66th Section of the Explosives Act, 1875, I have held an inquiry into the circumstances attending an explosion of dynamite which occurred at Cymmer, near Maesteg, Glamorganshire, on the 21st April 1876, by which 13 persons lost their lives and two others were injured. I also attended the adjourned inquest on the deceased which was held at Cymmer by Mr. Cuthbertson, coroner.

In accordance with the provisions of the above-mentioned section of the Act, I beg to furnish the following report:—

Circumstances under which explosion occurred.

The explosion took place in an unfinished tunnel, forming part of the Llynvi and Ogmore Railway Extension. This tunnel which, when completed, will be nearly a mile in length, is being driven through a high hill lying between Maesteg and Cymmer by the "Diamond Rock Boring Company (Limited)," of 2, Westminster Chambers, Victoria Street, S.W. The work at the time of the accident was being carried on from both ends, and at the north or Cymmer end a distance of 365 yards had been penetrated. At 8.30 p.m. on the 21st April an explosion occurred at a man-hole, situated in, and on the left side of, the tunnel, 176 yards from the mouth, by which 13 persons were instantaneously killed and two others sustained serious injuries. Some damage also was done to the tunnel, portions of the roof of the heading being injured, in one case at a distance of 118 yards from the scene of the explosion, and the wooden "centres" at the opening of the tunnel distant 176 yards being blown away.

The names of the persons who were killed were:—

John Bartle,	30 years -	Body or remains found 18 feet from scene of explosion.
Robert Quick,	25 " -	" " about 81 feet " "
Joseph Pearce,	25 " -	" " " 81 " " "
Robert Weeks,	30 " -	" " " 111 " " "
Edward Morgan,	32 " -	" " " 81 " " "
Evan Davies,	41 " -	" " " 111 " " "
John Osborne,	25 " -	" " " 81 " " "
George Moore,	20 " -	" " " 81 " " "
David Hitchins,	— " -	" " " 111 " " "
Morgan Jones,	19 " -	" " " 111 " " "
Richard Parsons,	29 " -	" " Opposite " "
James Oates,	— " -	" " about 81 feet " "
John Clements,	13 " -	" " Opposite " "

Two of the deceased, Richard Parsons and the boy Clements, were blown to atoms; some small fragments only of their bodies having been recovered, and these fragments were found in the immediate neighbourhood of the man-hole where the explosion had occurred. With regard to the other men, some of them, as Bartle, Moore, and Quick, were more or less externally injured, but the others do not appear to have exhibited any marked injury, and were considered by the doctors who gave evidence to have been

[C.—1601.] *Price* 1*s.* 2*d.*

killed by the shock to the nervous system and the co-operation of poisonous gases—*i.e.*, chiefly carbonic acid. A number of other men who were working further in the tunnel (*see* Plan) escaped injury. The position and details of the man-hole at which the explosion occurred, the structural damage effected by the explosion, and the spots at which the bodies were found and at which the injured and uninjured men were working, are shown on the accompanying plan, which is reduced from a tracing which was produced on behalf of the Company at the inquest, and of which a copy was given to me for the purpose of my inquiry. I desire here to take the opportunity of stating that I received from Mr. Lean, the resident engineer of the Company, every assistance and facility in carrying out my investigation, and also that the servants of the Company whom I examined replied readily to my inquiries.

After the accident had occurred, William Elliott, the foreman at the Cymmer end of the tunnel, and others, were prompt in removing the injured men, and Elliott especially seems to have displayed great presence of mind and gallantry. Immediately on the accident occurring he gave instructions to the engine-man to keep up a strong blast of fresh air into the tunnel; and he himself worked at the removal of the bodies and of the injured men until he was overpowered and rendered insensible by the noxious gases which the explosion of the dynamite had produced.

Arrangements of the Company for the storage and supply of explosives.

Proceeding to examine more particularly into the circumstances and cause of this lamentable explosion, the most fatal that has occurred in this country since the Stowmarket Gun-cotton Explosion in 1871, it appears that the work which was being carried on by the Company involved the use of a considerable quantity of explosive. Both gunpowder and dynamite were employed for the purpose; and at the time of the accident the Company also had some "Cotton powder," in their possession. Two magazines existed for the storage of the explosives, both being at the Maesteg side of the tunnel and distant over a mile from the Cymmer end. One of these magazines is used for the storage of dynamite; the other is used for the storage of gunpowder and cotton powder. The two magazines form separate buildings, more than 100 yards apart. The dynamite magazine existed in virtue of a special license No. 322, granted under the Nitro-Glycerine Act, 1869 (32 & 33 Vict. c. 113), and dated 25th August 1875 (*see* Appendix A.) This license being limited in duration to 12 months, holds good (in virtue of Section 52 of the Explosives Act,) until it runs out in August next, consequently the Company held their dynamite not in virtue of any licence under the existing Explosives Act, but in virtue of the unexpired license specified above.

The gunpowder magazine does not appear to have been covered by any license under the old Act, or by any license or registration under the new Act, and the storing of cotton powder (exceeding the amount which may be kept for private use and not for sale) without license or registration, was also illegal.

The question of illegality in regard to the storage and use of the explosives will, however, be more fully considered further on.

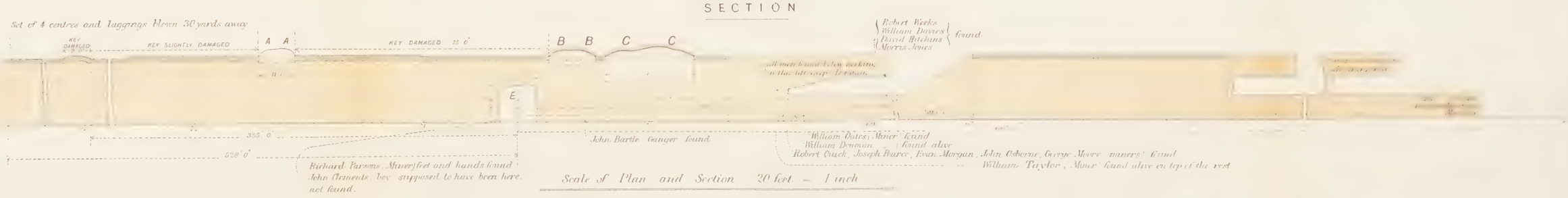
The practice appears to have been for the foremen respectively in charge of the two ends of the tunnel to draw supplies of explosive for their use from the magazine. At the Maesteg end of the tunnel, the foreman generally drew only a small quantity of explosive, about enough for 12 hours working, and this was deposited in a wooden box a little way within the tunnel, a packet being brought from the box to a little wooden shed outside, for the purpose of fiting the detonators and fuze for firing. I am not strictly concerned with this end of the tunnel, except in so far as the practice there bears upon the practice at the other end; but I cannot refrain from noticing the almost entire absence of precautions which I observed there. The box where the packages of dynamite are placed for use, contained, at the time of my visit, candles, fuze, old iron and rubbish and dirt of various descriptions; while the wooden shed, in which the charges were made up was a sort of general store, full of iron, spades, pickaxes, and other implements. There was also a stove in it, but this I was assured is never used.

It is clear, however, that at the Maesteg end of the tunnel, the precautions for preventing accidents by explosion were at a minimum; and no attempt seems to have been made by the issue of suitable instructions to enforce care and caution. Turning to the Cymmer end of the tunnel, it appears that the man-hole where the explosion occurred had been specially appropriated to the reception of the dynamite as it was received from the magazine at the Maesteg end; and it was fitted with a door and lock. The detonators and fuze were also kept here, the former being placed on a small shelf made for the purpose in the upper part of the man-hole. Elliott, the foreman at this end, states that it was an instruction to the men to prepare their charges not at the man-hole where the dynamite was kept, but at another man-hole 40 feet further in the tunnel. This

PLAN AND SECTION OF TUNNEL AFTER EXPLOSION ON 21ST OF APRIL 1876.

PLAN

SECTION



Scale of Plan and Section 20 feet. = 1 inch

Scale of Cross Sections 8ft. = 1 inch

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instruction, it was stated, as also the directions for the preparation of the man-hole where the stock of explosive was kept, had emanated from Mr. Lean the engineer.

The powder which was drawn from the magazine appears to have been kept in a separate place, some of it being in a man-hole 80 feet nearer the entrance of the tunnel than the dynamite man-hole.

The next question is, what quantity of explosive was kept in the man-hole; and what were the precautions enjoined or observed with regard to it.

The former of these points is of importance, not merely as bearing upon the loss of life and extent of damage produced by this explosion, but as affecting the question of the legality of the presence of a quantity of dynamite within the tunnel. The other point is of importance in regard to the light which it may throw upon the cause of the accident, and in its relation to the question of whether blame attaches to the Company or their responsible officers or servants for this explosion.

With regard to the quantity of explosive kept in the tunnel, there is, I think, no doubt that the quantity of dynamite actually present in the man-hole at the time of the explosion was 150 lbs. An issue of 200 lbs. of dynamite had been made from the magazine by Butland, the storekeeper, on the 18th April; and of this quantity, Elliott states 50 lbs. and no more had been used up to the time of the accident. Elliott spoke positively on this point. There were also in the man-hole "about 10 lbs." of cotton powder, some detonators and fuze. The whole of these were exploded or destroyed by the explosion.

It is clear, therefore, from the above that there had been placed in the man-hole on the 18th a quantity of dynamite sufficient for several days consumption; because while the quantity so deposited was 200 lbs., it appears that the actual consumption from the 18th to the 21st (3 days) only equalled 50 lbs. This fact it will be my duty to comment upon more closely hereafter.

As regards the precautions taken to prevent accidents, even if we assume that the place was intended only as a place of deposit for dynamite, those precautions appear to have been very much less stringent than is necessary to afford even a reasonable measure of security against accidents.

The man-hole had, it is true, a locked door; and the key was held by the two responsible foremen, Elliott and Bartle. But they were in the habit of giving the key to certain of the workmen for the purpose of fetching what dynamite they wanted; these men were not forbidden to use a naked candle in removing the dynamite, nor, indeed, do they appear to have been enjoined or required to exercise any more care than if they had been handling an inexplosive substance. Detonators, as I have stated, were also kept in the place; and the man-hole itself was not lined or in any way fitted as a place in which a quantity of explosive was habitually deposited most certainly should have been. And, as a matter of fact, the man-hole cannot be regarded as merely a place of deposit. It was also, as it appears, commonly used for the preparation of the charges, by the fitting together of the detonators, fuze, and dynamite. I have stated that this was contrary to instructions; but Elliott himself admitted frankly that this rule had to his knowledge been frequently disregarded, and that such disregard of a rule, which he considered an important one, he had not visited with more than a verbal reprimand. He had himself, he says, "several times" seen Richard Parsons preparing the primers at the dynamite man-hole. He had seen him doing so with a naked candle sticking against the side of the wall outside the man-hole about a foot or six inches from it; he had even seen him smoking while so engaged, and he knew, he tells us, that this was dangerous. But it never seems to have occurred to him that it was his duty to do more than reprimand the man; he had never even reported such dangerous disregard of instructions to Mr. Lean, nor had he taken the obvious precaution of refusing to allow this careless man the use of the key of the place. On the contrary, he allows Parsons to go again and again to the place; he again and again sees him doing what he knows was dangerous and directly contrary to orders; but he is satisfied on each occasion, with merely cautioning the man not to do it again.

Cause of explosion.

With regard to the cause of this explosion, there is evidence that Parsons at the time it occurred was again doing that which Elliott said he had before, and, in defiance of orders, and in disregard of warnings and reprimands, done "several times;" that is to say, he was engaged in preparing his primers at the man-hole in which the supply of dynamite was deposited. William Lewis, a collier by trade, happened to have gone into the tunnel a few minutes (he says about five or ten minutes at the outside) before the explosion. As he passed the man-hole he observed Parsons sitting on the sill of the man-hole, and he had some conversation with him. Parsons was engaged in making up

his charges, he had the detonators and fuze to his left hand, and immediately above the little accumulation of explosives, and about 6 in. from the side of the man-hole, he had his naked candle stuck against the wall in the usual way by a piece of clay. It is significant of the general disregard of precautions which prevailed, that Lewis should have selected a man engaged on this work as the person from whom he could most conveniently obtain a light for his candle; and it is significant also of Parsons' general recklessness, that he should not only have been ready to give him a light, but that while so engaged, he should have invited his particular attention to the detonators and other explosive material lying beside him. But this, Lewis states, is what passed; and when the conversation had ceased, Lewis passed on up the tunnel, after which, in a few minutes the explosion occurred. The fact that the remains of Parsons, blown almost to pieces, were found close to the man-hole, tends to show that he was, at the time of the explosion, still engaged upon the work which had occupied him when Lewis passed. Such being the case, it really seems unnecessary to have recourse to recondite suggestions to explain the cause of this terrible explosion. I am not aware that it has ever been seriously suggested that the explosion was the result of spontaneous ignition; but, as this theory is rather a favourite one on such occasions, I thought it desirable to submit to Dr. Dupré a sample of the dynamite from the same batch as that which exploded (taken from the magazine at the Maesteg end) for chemical examination. That gentleman's report shows that the dynamite was of satisfactory quality, and free from any indications of destructive chemical action, or of the presence of any elements which would justify suspicion in this direction. The details of his examination are given in Appendix B.

We are then left with our choice of the following possible explanations :—

1st. That, through some carelessness or clumsiness, Parsons exploded a detonator as he was fitting a fuze into it, or as he was fixing it in a primer.

2nd. That a spark was communicated in some way to one or other of the explosives present.

3rd. That the explosion was produced by a blow.

4th. That the candle fell on to and fired one or other of the explosives, thereby causing the explosion of the whole.

As regards the first possible cause, it is not impossible that the explosion may have proceeded from it, but it is certainly the most improbable of the four possible explanations enumerated above.

As regards the second possible cause, I ascertained by experiment not only that a spark can readily be struck with a piece of steel against the "Pennant" stone (a hard sandstone) in which the man-hole was excavated, but that even two pieces of the stone itself struck smartly together are liable to give a spark. It is certain that the boy Clements was standing at or near the man-hole at the time of the explosion; for he was blown to pieces, and the few remains of his body which were recovered (consisting only of his fingers) were found close to the spot. It is also certain that he had with him a steel drill 4 ft. long and $1\frac{1}{4}$ in. diameter, which was recovered after the accident doubled up in a serpentine shape, showing that it had been subjected to some great violence. There is no doubt that this drill would have been capable of striking a spark which might have fired the dynamite, or cotton powder, or the fuze.

Or, thirdly, the same drill would have been capable of exploding the dynamite by a blow. Dr. Dupré's report shows that dynamite of this quality can be exploded by a 1 lb. steel weight falling on to it a height of 18 inches. Or, the drill falling into the detonators might have produced an explosion; and Mr. Lean holds strongly to the opinion that the accident was caused in this way.

It is, of course, impossible to say that it was not so caused, but I venture to think that the falling of a candle (either that belonging to Parsons, or that carried by the boy) on to the little pile of detonators, fuze, and dynamite, is by far the most probable of the four suggested causes. It was urged by Mr. Lean, 1st, that had a candle fallen it would at once have been noticed, and Parsons and Clements would have had time to get away from the spot; but, as Elliott pointed out, had only one of the two candles present fallen, its fall might readily have escaped observation for the moment of time which would suffice to produce the ignition and resulting explosion; indeed, it is quite possible that a spark only may have fallen from the candle and not the candle itself.

2nd, Mr. Lean observed that had the explosion been produced by the ignition of the dynamite or fuze, the noise of the burning material would almost certainly have attracted Parsons' and the boy's attention, and they would naturally have fled. But to this it may be replied that the noise produced by the burning of a small portion of dynamite is scarcely perceptible until the ignition has proceeded to some extent, and assuming

that Parsons (who it must be recollected had been at work for some little time) had by him a few primers with the detonators fitted into them, a spark falling on to one of these would suffice to establish ignition, and, from an experiment which I have made, I conclude that this ignition of the dynamite might easily have produced the explosion of the detonator inserted in it before the sound of the burning was perceived; and, in the next place, an explosion produced by this means would have followed almost immediately on the ignition of a primer in which it may be assumed a detonator was fixed. Persons who have not actually made the experiment can hardly be aware of the silent rapidity with which the burning of a portion of ignited dynamite proceeds. And this observation holds good also with regard to gun-cotton. I am satisfied from my experiments that had a primer of dynamite (or gun-cotton) fitted with a detonator become ignited, it would scarcely have been possible for any person who might be close by to have effected their escape before the explosion which would be the necessary consequence of such ignition took place. I may add that I have also ascertained by actual experiment that a lighted candle falling on to dynamite almost instantly ignites it. Considering, therefore, that it is established that there existed all the elements for the production of an explosion in this way,—the naked candle stuck against the wall by means of clay (to say nothing of the candle probably in the boy's hand), the dynamite and the detonators, and almost certainly some primers already fitted with detonators, it seems unnecessary to have recourse to such explanations as the falling of a steel drill, or the accidental explosion of detonators to account for the explosion. There can, I should say, be very little reasonable doubt that the explosion was produced by the falling of a candle (or a spark therefrom) on to some of the explosive present, probably on to a primer of dynamite with detonator fixed, and that the resulting explosion extended to the whole of the explosives within the man-hole.

That the large quantity of dynamite present increased the loss of life, I have no doubt. It will be observed that the large proportion of the men who were killed were working at a distance of from 80 to 111 feet from the scene of the explosion, and it is further noticeable that of the men working at this distance two escaped with their lives. I am accordingly led to the conclusion that had the quantity of dynamite present been very much less than that which actually exploded, the lives of the whole of the 10 men who were working at these distances from the scene of the explosion would most probably have been saved.

Consideration of the question as to the blame attaching to the Company or their servants.

And this brings me to the concluding consideration:—

What blame attaches to the Company or their servants for this sad explosion and loss of life?

The coroner's jury, after about an hour's deliberation, returned the following verdict:—"That the deceased died from suffocation and shock, the result of an explosion of "dynamite, but how caused there is not sufficient evidence to show." I feel constrained to say that this verdict falls very far short of the meeting the justice of the case; and I must profess my surprise that the jury did not consider that the evidence which was laid before them at the inquest called for a more decided verdict, or at least made imperative some strong expression of opinion as to the general manner in which that part of the business of the Company which was connected with the storage and management of explosives was shown to have been carried on.

I conceive it to be my duty, at any rate, to point out that the Company appear not only to have been guilty of certain violations of the law, one of which I cannot doubt contributed to augment the loss of life resulting from this accident; but that they are also chargeable with an amount of carelessness and negligence in the management of the explosives kept and used by them which calls for a strong expression of censure and fixes on them a most serious responsibility in connection with this accident.

As regards the illegalities which I conceive were committed, it appears:—

1st. That the Company at the time of the accident were storing gunpowder and cotton powder without any license or authority. I have stated that they possessed a gunpowder magazine, and it appears from a return furnished to me by the Company of the issues of explosive to the Cymmer end of the tunnel, that the consumption of powder was considerable. This return will be found in Appendix C.; and it appears therefrom that there were constant issues of 2 cwt. of gunpowder at a time. Thus, in January, there were six such issues, making 12 cwt.; in February there were four such issues, making 8 cwt.; in March there was one issue of 2 cwt.; and in April (up to the 21st) there were three such issues, or 6 cwt. Thus the total issues of gunpowder from 1st January to 21st April amounted to 28 cwt. Under the Explosives Act, which came into operation on the

1st January last, no person may keep more than 30 lbs. of gunpowder without a license or under registration (Sec. 5), and then only provided it is kept for private use and not for sale. It is clear, therefore, that (not to go further back than the 1st January) the Company had been illegally storing gunpowder. They had also, it appears, been illegally storing gun-cotton (or "cotton powder"), for on the 17th April there was an issue to the Cymmer end of 56 lbs. of "patent gun-cotton" and "100 cartridges compressed ditto." Of this material the Explosives Act allows only 15 lbs. to be kept (for private use and not for sale) without license or registration (Order in Council No. 8).

With regard to this, however, Mr. Lean laid some stress on the fact that the Company had, prior to 31st March, made application for a store license to cover the storage of "Mixed Explosives," which license they have failed to obtain owing to the proposed site not being strictly in accordance with the provisions of the Order in Council relating to Stores. But it is proper to point out that the keeping of this gunpowder without a license had not only constituted an illegality since 1st January 1876, but was illegal under the old Act which expired at that date (see 23 & 24 Vict. c. 139, sec. XVIII.), and the mere fact of applying for a license about the end of March would not excuse the previous illegality, nor cover the continued storage of the explosive preceding the grant of such license, or after it had failed to be obtained.

2nd. But a more serious illegality, in my judgment, consisted in the storing of quantities of dynamite in the man-hole at the Cymmer end of the tunnel. A reference to the license held by the Company (copy of which is given in Appendix A.) shows that condition 3 directs that "Nitro-glycerine preparations stored in pursuance of this license shall "not be stored anywhere than in a certain magazine well and substantially built of brick "or stone, or excavated in solid rock, earth, or mine refuse, and lined throughout with "wood, and situated at Blaen Llynvi, near Maesteg, in the parish of Llangonoyd, in "the county of Glamorgan;" and condition 11 directs as follows:—"Nitro-glycerine "preparations stored under this license shall not be used except by the licensee or persons "in his immediate employ; and shall not be sold or served out except to persons in the "immediate employ of the licensee *for the immediate use of such persons* on work autho- "rised by the licensee."

Now it has been shown that a quantity of dynamite amounting to 200 lbs. had been deposited in the man-hole in the tunnel, which was not the place authorized by the license for the storage of the same, on the 18th April, and that at the time of the accident there remained of this amount 150 lbs. If this constituted a "storage" of dynamite it was a violation of the third condition of the license above recited, while if the issue of the 18th April was in excess of what was necessary for immediate use, the eleventh condition of the license had also been violated. I venture to express my opinion that there was a violation of both those conditions. There is, it is true, no actual limitation of time assigned in the Nitro-glycerine Act or in the license as the limit beyond which keeping constitutes "storage;" but, taken in conjunction with the eleventh condition of the license, it must, I think, be clear that where dynamite is kept in excess of what is required for "immediate use" there is a "storage" of the same. This brings me to the question, What is "immediate use?" The resident engineer Mr. Lean, who naturally in the interests of the Company would be disposed to assign a liberal interpretation to this expression, appeared to consider that "immediate use" meant about a day's (24 hours) consumption.

Elliott stated that he had received verbal instructions from Mr. Lean not to get more than two boxes (=100 lbs. in all) at one time. This, at the rate of consumption which had obtained up to the date of the accident, would generally represent four or more days consumption. Mr. Lean, however, states that he does not recollect giving Elliott these instructions, and thinks it improbable that he would have given an order for any definite limit of quantity without regard to the actual consumption. But be this as it may, it is quite clear that, as a matter of fact, no correspondence between the quantity required for "immediate use" and the quantity actually issued was observed on the occasion of the last issue or on former occasions.

An analysis of the return in Appendix C. gives the following results:

January.—Total issues between 3rd January and 3rd February, 650 lbs. If we assume that the consumption proceeded at the same rate, we have for the 31 days an average consumption of about 21 lbs. a day. But in no case were the issues less than 50 lbs., or two days consumption, and in one case (the 14th), 100 lbs. was issued. There were in the month, 11 issues of 50 lbs.,=over 2 days each, and 1 issue of 100 lbs.,=nearly five days.

February.—Total issues and (assumed) consumption from 3rd February to 1st March, 750 lbs.,=average consumption for the 26 days, 29 lbs. per diem. But the actual issues were—

7 of 50 lbs. - - = over 1½ days each.
2 of 100 lbs. - - = about 3½ „
1 of 200 lbs. - - = „ 7 „

March.—From 1st March to 4th April, issues and (assumed) consumption, 550 lbs., making an average consumption for the 34 days of 16½ lbs. a day. But the whole of this amount was served out in only five issues, being—

1 of 30 lbs. - - - = about 1½ day
4 of 100 lbs. - - - = „ 6½ days each.

April.—Issues from 4th to 21st, 550 lbs. Of this 150 lbs. was destroyed by the explosion, leaving 400 lbs. expended between the 4th and 21st, and giving an average consumption for the 17 days of 22 lbs. a day.

The issues during this month were,—

1 of 50 lbs. - = 2 days consumption.
3 of 100 „ - = 4 „ „
1 of 200 „ - = 8 „ „

I do not lose sight of the fact that this mode of exhibiting the want of correspondence between the issues and the quantities required for "immediate use" is open to the objection that being based upon the "average" rate of consumption it takes no account of the occasionally heavy expenditures of dynamite, or of the days when there was no such expenditure at all. It may be represented, for example, that although 100 lbs. was issued on the 14th January when the average consumption was only 21 lbs. a day, there is nothing to show that the whole of that 100 lbs. was not, in fact, used on the 14th or 15th. But this argument, if it be admitted, includes also the admission that the consumption was exceedingly variable, and subject to no very reliable rule of averages, and it follows, therefore, that the storekeeper, in the absence of definite information as to the actual consumption or immediate requirements, could not possibly have adjusted his issues to the real requirements for "immediate use." In the absence of any such information he would have nothing whatever to go upon but his calculation as to the rate at which the dynamite was demanded, and at which, judging from the frequency or infrequency of these demands, its use was proceeding; and the above tables and the details given in Appendix C. at any rate show that if he in fact proceeded upon this method of calculation he certainly made no attempt to observe any relation between his issues and the amount apparently required for immediate use, seeing that he actually made his issues in quantities varying from one and a half to eight days average consumption. Had the storekeeper then anything else to guide him? It appears that he had not. It was the practice of the foreman, Elliott, when he wanted dynamite, to make a requisition on a form provided in a book; but it was not his practice to specify the amount required, nor had the storekeeper, whose magazine was distant about a mile (over rough mountain road) from the Cymmer end, any other opportunity of ascertaining with any sort of accuracy what was being actually used. And as a matter of fact it appeared from my examination of the storekeeper that he was even ignorant of the particular condition of the license which required the issues to be thus regulated.

It can hardly be successfully contended that a storekeeper who was not only ignorant of the actual quantities required for "immediate use," but also of any obligation limiting the issues in this way, was in a position or likely to observe this condition of the license, and it is not therefore to be wondered at that an examination of the issue book discloses on the face of it an entire absence of any observance accidental or designed of this condition.

Still, despite the probability, almost certainty, that this condition must under the circumstances have failed to be observed, and despite its apparent non-observance throughout the three and a half months preceding the explosion, as ascertained by the method of computation adopted above, I deemed it necessary to examine a little closer and to inform myself whether there actually was, on the particular occasion in question, a non-observance of this rule. The storekeeper's book shows that there was an issue to the Cymmer end, on the 18th April, of 200 lbs. of dynamite. Elliott stated that on receiving this large amount he was at a loss what to do with it, and would have sent some of it back, but he considered he had no authority to do so. There had been nothing in Elliott's requisition to suggest the sending of this large quantity. It is true there had been a slight delay in the obtaining of dynamite from the agent at Cardiff, and there was also the fact that the chairman of the Company (Major Beaumont) was known to the

storekeeper to be present and carrying out experiments with new drills, and there was thus on his mind an impression that the stock had run out, and that the occasion was one when probably an extra supply would be useful. As a matter of fact both these surmises were incorrect, for there still remained (Elliott says) 50 lbs. of dynamite when the new supply was received, and there was in fact no increase whatever in the actual rate of consumption for that month.

These circumstances alone, show how impossible it was for a storekeeper, without definite instructions aad a proper system, to have observed this important condition.

Moreover, the license leaves no room for guesses and conjectures of this sort.

It expressly prohibits the issue of larger quantities than are required for immediate use; not quantities larger than the storekeeper or other person may consider or conjecture to be necessary, but quantities not exceeding what actually *is* necessary.

Applying this test, we find that while 200 lbs. were issued on the 18th, no less than 150 lbs. of that amount was unexpended on the evening of the 21st. This circumstance, quite apart from the other considerations which I have urged, seems to establish clearly a serious violation on this particular occasion of a most important condition of the license; one, moreover, to which, as I have shown, the storekeeper's attention had not been specially directed by the Company, of which, indeed, it appeared that he was in fact ignorant, and one, finally, the neglect of which contributed, I do not doubt, to a large increase in the number of deaths resulting from this most serious explosion.

I observed one or two minor illegalities in the magazine, *e.g.*, it was not wholly lined with wood, and it was not wholly free from the presence of iron; but on these points it is not necessary particularly to insist. The substantial illegality was that which I have endeavoured to bring out into prominence above, viz., the illegal storage in the tunnel of a quantity of dynamite in excess of what was required for immediate use.

Negligence of the Company and their servants with regard to the management of explosives.

But it is still my duty to make some observations on the negligence which is shown to have prevailed with regard to the keeping and handling of the dynamite.

I have already mentioned the laxity which prevailed even subsequent to the explosion, and up to the time of my visit, at the Maesteg end of the tunnel, a laxity which is not to be excused by the fact that the quantity of explosive was small, for it was certainly not so small that fatal consequences might not have ensued from its explosion. But at the Cymmer end with which I am more particularly concerned and where the quantity kept was sufficiently large, as we unfortunately know only too certainly, to cause the deaths of many persons, the absence of adequate precautions was not less conspicuous. Indeed, if we except the facts that the man-hole where the dynamite was stored (in quantities far exceeding what was necessary) was provided with a locked door, and that the men had been instructed not to prepare their charges at this spot—an instruction which it plainly appears there was no real attempt to enforce—it may be said that no precautions whatever were taken.

The foreman who was charged with the receipt and custody of the dynamite had neither received nor issued any written instructions with regard to its management; he was even doubtful, it seems, whether he would be justified when he received an unduly large supply (as he did on the 18th April) in sending some of it back, and as a matter of fact he did not venture to take the responsibility of doing so, and accordingly stowed it all away for want of a better place in the man-hole; a suggestion which Elliott says he had made to Mr. Lean that a small supplementary magazine should be provided outside the tunnel was not adopted; the man-hole beyond being provided with a door and lock was not fitted in any way as even a place of temporary deposit for explosive should be, whether the explosive so deposited be in large or small quantities; the detonators were kept inside the man-hole with the dynamite; the whole business of the place was permitted to be carried on by the light of naked candles; smoking, which in theory was prohibited, could, as it appears, be indulged in in the man-hole with impunity; while even repeated disregard of the orders which had been given against preparing the charges at this man-hole entailed upon the offenders no more serious consequences than a verbal reprimand.

It is not supprising that such general laxity and carelessness should ultimately have resulted in a disaster; indeed the really surprising thing would have been the absence of such a result; and I consider that the Company in permitting such a state of things to exist on their works incurred a most serious responsibility, and have laid themselves open to very grave censure. The case is, in my judgment, further aggravated by the considerations, 1st. That the responsible officers of the Company were cognizant of the habitual carelessness of their workmen in their dealings with explosives, a carelessness of which in the case of Parsons the foreman Elliott had repeated and ample ocular evidence; 2nd. That

they could not plead ignorance of the sort of precautions which should have been observed because the detailed conditions of their dynamite license furnished a useful and sufficiently precise guide on this point. The observance in the man-hole of the precautions enjoined in conditions 6 to 10 of this license (*see* Appendix A.) would probably have averted this disaster, and I quite fail to follow an argument or excuse put forth by Mr. Lean, that while these precautions were no doubt proper to be observed where the amount exceeded 150 lbs. or 200 lbs. they were unnecessary in the case of smaller quantities; indeed, a more emphatic contradiction of the soundness of Mr. Lean's view that there was no objection to detonators being kept with the dynamite when the latter did not exceed 150 lbs. could not have been furnished than was furnished by the unfortunate fact that this particular amount of dynamite had sufficed (through the agency in all probability of a single detonator) to kill 13 persons, and it must be a matter of surprise and regret that Mr. Lean should have ventured to offer this argument in face of the damaging refutation which this explosion afforded. Nor did Mr. Lean's argument in favour of the use of naked candles appear to me more convincing. He urged that the light given by a lamp is inferior to that given by a candle, and that consequently with a lamp there would have been a greater temptation to bring it into dangerous proximity to the explosive. But it appeared on cross-examination, that Mr. Lean's conception of the relative illuminating power of candles and lamps rested upon no substantial basis. He had not, he said, taken any steps to ascertain whether a safe and efficient lamp for magazine use could be obtained, notwithstanding that the 8th condition of his dynamite license distinctly indicated the existence of such a lamp (*see* Appendix A.). Had he taken any trouble on the subject, he would have discovered that two patterns of lamps had been approved by me on behalf of the Secretary of State, and that the illuminating power of either of them was vastly superior to that of the common tallow candles actually employed. He would also have found that these lamps might be brought into even close proximity to an explosive without danger. In fact, he would have found that his argument on this point was worthless. Further, it appears to me that the grounds upon which Mr. Lean stated that he had declined to adopt the suggestion made by Elliott, that a supplementary magazine should be provided outside the tunnel for the storage of the supplies of dynamite as received from the Maesteg end are wholly untenable He said, that to have adopted this prudent suggestion would have entailed the carriage of prepared charges of dynamite fitted with fuze and detonator from such magazine into the tunnel at a risk to the persons working outside and to the huts and workshops, and that as dynamite is not dangerous until it is fitted to the detonator the nett result of this arrangement would have been an increase of risk. But even if the statement that dynamite is not dangerous until it is fitted to a detonator were correct, which it certainly is not, the result suggested by Mr. Lean would not necessarily have followed; for it would, of course, have been open to the Company to require the detonators to be fitted as required for use in the tunnel, such small quantities only being sent from the supplementary magazine into the tunnel as might be actually required for immediate use. Moreover, by storing the stock of dynamite in the tunnel instead of outside, two journeys were in fact necessitated instead of one, for all dynamite so taken in had to be brought out again in quantities sufficient for immediate use, to be softened by the application of heat, and when so softened taken back again. Had the stock been kept in a supplementary magazine, the required quantities might have been taken out therefrom, softened at the place appointed for the purpose, and when softened carried on into the tunnel, there to be primed and used.

In short, the arguments by which it was sought to excuse the practices or omissions of the Company were, to my mind, the reverse of satisfactory, and in discharge of the duty imposed upon me by the 4th sub-section of section 66 of the Act, of making such observations on the evidence or any matters arising out of the inquiry which I may think right, I feel constrained to express my opinion that these arguments must be regarded rather as excuses put forward after the occurrence for what they are worth, than as considerations which had seriously influenced the Company and their servants with regard to the course which they had adopted, or with regard to the precautions which they had omitted to observe.

When all has been said, the conclusion appears inevitable that serious blame attaches to the Company and their servants for the dangerous negligence which is shown to have prevailed at these works in regard to the keeping and handling of explosives.

To apportion the blame in regard to this negligence is not easy. Primarily I suppose the Company must be held responsible for the acts or omissions of their servants, and I do not think this responsibility can be considered to be discharged by the fact that, in practice, the working management was vested in Mr. Lean. It was surely the duty of

the Company, as it is of everybody carrying on operations which involve risk of accident, to satisfy themselves that adequate precautions have been adopted for the prevention of accidents. Had the Company made any inquiry of this sort, I cannot doubt that they must have seen reason, as they can hardly fail to see reason now, for dissatisfaction with the arrangements. The professional qualifications of the chairman (Major Beaumont, R.E.) and his experience in connexion with explosives, would at once have suggested to him that the arrangements adopted were not such as to afford any reasonable security against a serious accident.

The actual working arrangements were, however, in the hands of Mr. Lean, the resident engineer, and it does appear to me that this gentleman is seriously to blame for the state of things which prevailed. It was, in my opinion, his duty to have taken steps to secure the strict observance of the conditions of the license and the adoption of proper measures of precaution; but Mr. Lean appears to have tacitly delegated his functions to the storekeeper and the foremen, and this without taking any steps to direct their special attention to the particular points affecting their respective duties. Butland was left to find out for himself how much dynamite he should issue, and this, as we have seen, he wholly failed to discover; and the foremen were left to take such precautions as seemed to them proper, and these, it has been shown, were culpably inadequate; so, in the end, we find an excessive quantity of dynamite being issued and the keys of the man-hole in which it was kept entrusted to a man (Parsons), whom the foreman, Elliott, knew to be reckless and in the habit of disobeying such elementary orders as had been issued with a view to the prevention of accident. There was thus, as it appears to me, a general failure of duty and censurable negligence on the part of all concerned, beginning with the Company, continuing with Mr. Lean, Butland (the storekeeper), and Elliott, and ending with Parsons, and to the failure of duty and negligence of this last-named man in the careless and improper making up of the charges at the man-hole, the explosion, as I have shown, may be immediately ascribed, while the large resulting loss of life was no doubt due to the direct violation of a condition of the license and the illegal presence of a quantity of dynamite largely in excess of what was required for "immediate use."

I have, &c.

V. D. Majendie, Major R.A.,

The Right Hon. the Secretary of State, H.M.'s Inspector of Explosives
Home Department.

N.B.—The publication of this Report has been postponed, pending proceedings against the Diamond Rock Boring Company for the offences indicated therein. Those proceedings have now been taken, a conviction obtained, and penalties have been imposed.

August 1876. V. D. M.

APPENDIX A.

FORM A.

Holder's Name - - - The Diamond Rock Boring Company, Limited.
Holder's Address - - 2, Westminster Chambers, Victoria Street, London.
Site of Magazine { Place - Blaen Llynvi near Maesteg, in the parish of Llangonoyd.
County - Glamorgan.

NITRO-GLYCERINE ACT, 1869.
(32 & 33 Vict. cap. 113.)

SPECIAL LICENSE FOR STORING, USING, SELLING, AND TRANSPORTING NITRO-GLYCERINE PREPARATIONS.

To the Diamond Rock Boring Company, Limited.

I, the Right Honourable Richard Assheton Cross, being one of Her Majesty's Principal Secretaries of State, do hereby, in pursuance of the powers vested in me by the above-mentioned Act, authorise you to store, use, sell, and transport nitro-glycerine preparations on the following conditions :—

GENERAL CONDITIONS.

(1.) No other nitro-glycerine preparations shall be stored, used, sold, or transported under this license than the nitro-glycerine preparations specified in the schedule hereto, and such other nitro-glycerine preparations as a Secretary of State may hereafter in writing authorise for the purposes of this license, or may hereafter by Order published in the Gazette authorise for the purposes of all special licenses for storing, using, selling, and transporting nitro-glycerine preparations.

Storing.

(2.) The quantity of nitro-glycerine preparations stored in pursuance of this license shall not at any one time exceed one thousand pounds.

(3.) Nitro-glycerine preparations stored in pursuance of this license shall not be stored anywhere than in a certain magazine well and substantially built of brick or stone, or excavated in solid rock, or earth, or mine refuse and lined throughout with wood, and situated at Blaen Llynvi, near Maesteg, Llangonoyd, in the county of Glamorgan, at the distances herein-after mentioned ; that is to say :

Distance.	From.
Over 3 miles	(*a.*) The Metropolis (as defined by the Metropolis Local Government Act, 1855).
„ 2 „	(*b.*) Any royal residence.
„ 1 „	(*c.*) „ magazine belonging to the Crown and containing gun-powder or any other explosive.
„ 100 yards	(*d.*) „ other magazine or store containing any explosive.
„ 300 „	(*e.*) „ church.
„ half a mile	(*f.*) „ borough or market town having more than 10,000 inhabitants.
„ 200 yards	(*g.*) „ hospital.
„ 200 „	(*h.*) „ factory or workshop.
„ 150 „	(*i.*) „ dwelling-house.
„ 200 „	(*j.*) „ school or charitable institution.
„ 100 „	(*k.*) „ river or sea wall.
„ 100 „	(*l.*) „ canal.
„ 100 „	(*m.*) „ railway.
„ 100 „	(*n.*) „ highway or public wharf.

If at any time after the grant of this license, by reason of the approach to the magazine of any such buildings or works as above-mentioned, the magazine ceases to be beyond the distances above mentioned, this license shall cease to authorise the use of such magazine for any nitro-glycerine preparations, except with the written consent of the Secretary of State, or of any person authorised by him. Such consent shall be endorsed on the license.

(4.) Such magazine shall be efficiently protected by one or more lightning conductors, in case any person authorised by the Secretary of State may in writing require the same.

(5.) The door of the magazine shall be well and securely locked at all times, except during the receipt and delivery of the nitro-glycerine preparations.

(6.) The magazine shall be used exclusively as a magazine for nitro-glycerine preparations, and no work shall be carried on therein, except work connected with the storing and delivery of the same.

(7.) No gunpowder or other explosive or inflammable material than nitro-glycerine preparations shall be at any time admitted to the magazine.

(8.) No receipt or delivery of any nitro-glycerine preparations shall be allowed by artificial light, except by that of a lamp of a pattern approved by a person authorised by a Secretary of State.

(9.) No lucifer matches, fusees, lighted pipes, naked lights, fires, detonators or percussion caps, and no such fuzes or cartridges as contain their own means of ignition, and no articles liable to cause fire or explosion, shall be at any time admitted to the magazine.

(10.) Due precautions shall be maintained to secure the magazine against ignition or explosion.

Use and Sale.

(11.) Nitro-glycerine preparations stored under this license shall not be used except by the licensee or person in his immediate employ ; and shall not be sold or served out except to persons in the immediate employ of the licensee, for the immediate use of such persons on work authorised by the licensee.

(12.) When any nitro-glycerine preparation is sold or served out under this license, (except the same be for immediate exportation) there shall be attached to each box, case, or package containing the same, a printed paper, in English, Welsh, and Gaelic, with the following instructions :—

1. "This" [*here name the particular nitro-glycerine preparation*] "may not be thawed or tempered "for use by any other artificial means than by means of warm water, and then only at a safe "distance from every magazine, dwelling-house, factory, &c."
2. "This" [*here mention the particular nitro-glycerine preparation*] "may not be used in any place "in such a way as to endanger the public safety."

To the above instructions may be added any others, not contradictory thereto, which may appear expedient.

Transport.

(13.) The licensee shall not transport any nitro-glycerine preparation, except as follows :—

(*a.*) To his magazine, authorised by this license from the place of delivery.

(*b.*) From his magazine, authorised by this license, either to another magazine, authorised by a license for the storage of nitro-glycerine preparations as defined in the schedule hereto ; or to some place either for immediate use or for exportation, provided the licensee or the person to whom the issue is made is duly licensed to export such nitro-glycerine preparation.

(14.) The licensee shall not cause such transportation to be effected by another person, unless such person be in his regular employ, or hold a general or special license to transport nitro-glycerine preparations as defined by this license.

(15.) When the transportation is from the magazine of the licensee, by whomsoever it be effected, the licensee shall secure that the following precautions are observed :—

(*a.*) All such nitro-glycerine preparations shall be packed in parchment-paper, or in boxes or bags with an india-rubber lining, and then in a wooden case or barrel. Not more than 10 lbs. of a nitro-glycerine preparation shall be contained in each package or india-rubber bag, nor more than 100 lbs. in such wooden case or barrel.

(*b.*) No detonating or percussion fuzes, caps, or primers, or articles liable to cause fire or explosion, shall be packed in the case or barrel containing the nitro-glycerine preparation.

(*c.*) The wooden case or barrel containing the nitro-glycerine preparation shall not have any iron about it; and there shall be attached to each such case or barrel a label, in conspicuous characters, stating the name of the particular nitro-glycerine preparation therein contained, with the addition of the words "Nitro-glycerine Preparation,—Explosive."

(16.) When the transportation is from the magazine for any other purpose than the immediate use by the licensee or any person in his employ, the licensee shall give to the person in charge of the conveyance a written notice stating the character and quantity of the goods sent, retaining himself a duplicate of such notice, and shall attach his own name and address to each case or barrel containing the nitro-glycerine preparation.

(17.) When the transportation is by the licensee or any person in his employ, then, whether it is to or from the magazine of the licensee, such transportation shall be exclusively by land, and the licensee (the holder of this license) shall also secure that the following precautions are observed :—

(*a.*) Such transportation shall not be made in a conveyance carrying public passengers.

(*b.*) No greater quantity may be transported than,—

(1.) In a conveyance specially constructed for the purpose, and closed on all sides with wood or metal, or with a tilted cover, and containing no other explosive or inflammable material - - - - - 1,000 lbs.

(2.) In a conveyance not specially constructed or closed as aforesaid, but in which the nitro-glycerine preparation is entirely covered with painted cloth, tarpaulin, or wad-mill tilts - - - - - - 1,000 lbs.

(*c.*) A nitro-glycerine preparation may not (unless placed in a separate compartment) be transported in any conveyance which contains any lucifer matches, vesuvians, fusees, or such fuzes or cartridges as contain their own means of ignition, or other articles liable to cause fire or explosion.

(*d.*) At least one competent and trustworthy person shall be in charge of each conveyance, and be in constant attendance thereon.

(*e.*) No loitering or unnecessary delay in loading or unloading shall be permitted.

Miscellaneous.

(18.) The licensee shall, when required by any person duly authorised by the Secretary of State, allow him to take for examination small samples of any nitro-glycerine preparation stored, used, sold, or transported by virtue of this license.

(19.) The licensee shall, when required by any person duly authorised by the Secretary of State, produce to him his license, and furnish him with the means necessary to enable him to ascertain whether the conditions of the same are complied with.

(20.) A copy of this license shall be kept posted up at the magazine used in virtue thereof.

SPECIAL CONDITIONS.

(21.) Nil.

Penalty.

I hereby annex to the breach of any of the conditions of this license a penalty, to be recovered summarily, of such sum under one hundred pounds as the justices trying the case shall direct to be paid by the person committing such breach.

Duration of License.

This license shall be in force for 12 months from the date hereof unless previously revoked by one of Her Majesty's Principal Secretaries of State, or surrendered by the licensee.

Whitehall, this 25th day of August, 1875.

(Signed) RICHARD ASSHETON CROSS.

SCHEDULE.

I. *Dynamite, No.* 1, consisting of not more than 75 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 25 parts by weight of an infusorial earth known as "kieselguhr," and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

II. *Dynamite No.* 2, consisting of not more than 18 parts by weight of thoroughly purified nitro-glycerine uniformly mixed with 82 parts by weight of a pulverised preparation, composed of nitrate of potash 71 parts, charcoal not less than 10 parts, and purified paraffin (or ozokerit) 1 part, (*or* nitrate of potash 72 parts and charcoal not less than 10 parts) by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

III. *Horsley's Blasting Powder A*, consisting of not more than 25 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 75 parts of a pulverized or granulated preparation, composed of chlorate of potash 3 parts, and nutgalls 1 part by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

IV. *Horsley's Blasting Powder B*, consisting of not more than 25 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 75 parts by weight of a pulverized or granulated preparation, composed of chlorate of potash 6 parts, nutgalls 1 part, and charcoal 1 part by weight, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

V. *Brain's Blasting Powder*, consisting of not more than 40 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 60 parts by weight of a pulverized preparation, composed of 2 parts by weight of charcoal and fine sawdust, and 3 parts by weight of a mixture of nitrate and chlorate of potash, of which not more than one half is chlorate of potash, and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

VI. *Lithofracteur*, consisting of not more than 55 parts by weight of thoroughly purified nitro-glycerine, uniformly mixed with 45 parts by weight of a pulverized preparation, consisting of 1 part by weight of charcoal, bran, and sawdust (*or* of any one or more of the same), $3\frac{1}{2}$ parts by weight of an infusorial earth known as kieselguhr, $2\frac{1}{2}$ parts by weight of nitrate of baryta and bicarbonate of soda (*or* of either of them), $\frac{1}{2}$ part by weight of sulphur and manganese (*or* of either of them), and sufficiently absorbent in quality when mixed in the above proportions to prevent exudation of nitro-glycerine.

APPENDIX B.

REPORT on a SAMPLE of DYNAMITE received from MAJOR MAJENDIE, 15 May, 1876. Sample described as "Sample of Dynamite from Magazine of Diamond Rock Boring Co. at Maesteg. Part of same supply as exploded in tunnel at Cymmer on 21st April, 1876."

No. 105. Sample consisted of one large sized cartridge in parchment paper wrapper, stamped in black "British Dynamite Company Limited. Alfred Noble." *General Characters*, &c. &c.—Pale red, very slightly plastic mass, no trace of exudation. Water dissolves a little (0·45 %) of sulphate of calcium, with slight traces of nitrate, aqueous extract is very feebly alkaline. Fifty grains heated to 160° F. give acid vapour test in $9\frac{1}{2}$ minutes. Explodes when heated to a temperature of 390° F. A 1 lb. steel weight falling on a small portion from a height of 18 inches causes it to explode.

It consisted of Nitro-glycerine 74·39%
Kieselguhr 24·94
Moisture 0·67
100·00

Westminster Hospital,
May 20, 1876.

(Signed) A. DUPRÉ.

APPENDIX C.

STATEMENT showing delivery of Explosives to Cymmer :—

Date.	Daily Statement.				Monthly Statement.				REMARKS.
1875.	Dynamite.	Powder.	Fuze.	Caps.	Dynamite.	Powder.	Fuze.	Caps.	
April 5		21 lb.	21 Rings						
„ 7		28 „							
„ 8		56 „							
„ 26		28 „							
„ 28	5 lbs.	56 „		20					
„ 30		56 „			5 lbs.				
May 4		56 „							
„ 7	5 „		6 „	30					
„ 9	5 „			20					
„ 12		56 „	2 „						
„ 17	10 „			1 Box					
„ 18		56 „							
„ 21	5 „	56 „							
„ 26	5 „	56 „							
„ 29	5 „	56 „	1 P. Rt.		35 lbs.				
June 4	8 „	56 „							
„ 8	5 „	56 „		1 Box					
„ 9	5 „	56 „							
„ 10	20 „		2 „	1 „					
„ 15		112 „							
„ 19	10 „	56 „							
„ 23	10 „	56 „	1 „						
„ 25	10 „								
„ 26	10 „	112 „		1 „					
„ 30	20 „		1 „		98 lbs.				
July 1	30 „								
„ 3	20 „		1 „	1 „					
„ 6	20 „								
„ 8	5 „	56 „							
„ 13		112 „	1 „						
„ 15	10 „	112 „	1 „						
„ 20	10 „	112 „	1 „						
„ 22		112 „	1 „	1 „					
„ 24		112 „							
„ 26	10 „	112 „	1 „						
„ 29	10 „		1 „						
„ 31		112 „	1 „		115 lbs.				
Aug. 3	10 „	112 „	1 „						
„ 5		112 „	1 „	1 „					
„ 7	10 „	112 „	1 „						
„ 10	5 „	112 „	2 „						
„ 13	10 „		2 „	1 „					
„ 17	20 „		1 „						
„ 19	45 „			1 „					
„ 21	10 „		1 „	$\frac{1}{5}$ „					
„ 23		112 „	1 „	1 „					
„ 25	45 „			1 „					
„ 26	50 „		1 „	1 „					
„ 30	25 „	224 „	1 „	2 „	230 lbs.				
Sept. 4	10 „	112 „	2 „	1 Box					
„ 7	20 „	112 „	2 „	1 „					
„ 9	15 „	112 „	1 „						
„ 11		112 „	1 „						
„ 15	15 „	112 „		1 „					
„ 17	25 „	112 „	1 „						
„ 22	25 „	224 „	2 „	1 „					
„ 25	20 „	112 „	1 „						
„ 28	25 „	112 „	1 „	1 „	155 lbs.				

STATEMENT showing the Delivery of Explosives at Cymmer—*continued.*

Date.	Daily Statement.				Monthly Statement.				REMARKS.
1875.	Dynamite.	Powder.	Fuze.	Caps.	Dynamite.	Powder.	Fuze.	Caps.	
Oct. 1		112 lbs.	1 P. Rt.	1 box					
„ 5		112 „	9 coils						
„ 7		224 „	1 P. Rt.						
„ 12		224 „	4 „						
„ 14		224 „	1 „						
„ 18		112 „	4 „						
„ 21		112 „							
„ 28		112 „			Nil.				
Nov. 4	5 „	112 „	1 „						
„ 5	5 „			1 „					
„ 8	10 „	112 „	1 „						
„ 9		112 „							
„ 10		112 „							
„ 11			1 „						
„ 12	10 „								
„ 15			1 „	1 „					
„ 16	20 „								
„ 19			1 „						
„ 22	15 „			1 „					
„ 26	15 „	224 „		2 „					Charges, 24 compressed powder.
„ 29			1 „		80 lbs.				
Dec. 1	15 „	112 „	1 „						
„ 4	20 „		1 „						
„ 7	30 „	224 „	1 „	1 „					
„ 13	25 „	224 „	1 „	1 „					
„ 15		224 „	4 „	1 „					50 ditto.
„ 21			2 „						
„ 23			1 „						
„ 30	150 „				240 lbs.				
1876.									
Jan. 1			1 „	1 „					
„ 3	50 „								
„ 4	50 „	224 „	3 „						
„ 6	50 „	224 „	2 „	2 „					
„ 10	50 „		2 „	2 „					
„ 12	50 „	224 „							
„ 14	100 „			2 „					
„ 18	50 „	224 „		2 „					
„ 21	50 „								
„ 22	50 „		13 coils	2 „					
„ 25	50 „	224 „		1 „					
„ 26			2 P. Rts.						
„ 27	50 „	224 „	2 „	2 „					
„ 28	50 „		2 „	2 „	650 lbs.				
Feb. 3	50 „		2 „	2 „					
„ 7	50 „	224 „	2 „	2 „					
„ 9	100 „		2 parts						
„ 11	100 „	224 „	4 „						
„ 12				2 „					
„ 16	200 „	224 „	2 „	2 „					
„ 18	50 „								
„ 19	50 „		2 „	2 „					
„ 22	50 „		2 „	2 „					
„ 24	50 „		2 „	2 „					
„ 26	50 „	224 „	2 „	2 „	750 lbs.				
Mar. 1	100 „	224 „							
„ 4			2 „	1 „					
„ 6				1 „					
„ 16	150 „								
„ 18			1 „	3 „					
„ 21	100 „		1 „						
„ 28	100 „		1 „	2 „					
„ 30	100 „		2 „	3 „	550 lbs.				

STATEMENT showing the Delivery of Explosives in Cymmer—*continued.*

Date.	Daily Statement.				Monthly Statement.				REMARKS.
1876.	Dynamite.	Powder.	Fuze.	Caps.	Dynamite.	Powder.	Fuze.	Caps.	
April 4	100 lbs.		2 P. Rt.	1 box					
„ 5	100 „		1 „	1 „					
„ 11	100 „	224 „	2 „						
„ 13	50 „	224 „	2 „						
„ 17			2 „	2 „					
									56 lbs. patent gun-cotton.
„ 18	200 „	224 „							
„ 20			20 coils		550 lbs.				100 cartridges compressed do.

NOTE.—3,308 lbs. of dynamite = total quantity delivered.

Since January 1st, to date, the total quantity delivered = 2,500 lbs.

Total quantity of powder delivered, 4 tons 8 cwt. 0 qrs. 21 lbs.

LONDON:
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REPORT

TO

THE RIGHT HON. THE SECRETARY OF STATE FOR THE HOME DEPARTMENT,

ON

The Circumstances attending an Explosion of Fulminate of Mercury at Hinks' Chemical Works, Small Heath, Birmingham, on the 14th May 1876,

BY

MAJOR A. FORD, R.A.,
H.M. INSPECTOR OF EXPLOSIVES.

Presented to both Houses of Parliament by Command of Her Majesty.

SIR, Home Office, 6th June 1876.

I HAVE the honour to report that in accordance with an Order made by you under the 66th section of the Explosives Act, dated the 15th ultimo, I have made an inquiry into the circumstances attending the death of Joseph Corfield from an explosion at Small Heath, Birmingham, on Sunday, the 14th May 1876.

I also attended the adjourned inquest held by Mr. Hawkes, the coroner of the borough of Birmingham, on the body of the deceased on the 30th May.

In accordance with the provisions of the above-named section, I beg to render the following report.

Site and circumstances of explosion.

The explosion occurred at the chemical works of Mr. Hinks, Little Green Lane, Small Heath. Mr. Hinks is the proprietor also of a fulminate factory situated at Stechford, about four miles from Birmingham, for which he obtained a license from the justices in 1871. Prior to that time the manufacture of fulminate of mercury was carried on by him at his chemical works at Small Heath without a license, but on his obtaining a more suitable site for that part of his business it was discontinued at the chemical works. The portion of the works at Small Heath used for the manufacture of the fulminate consisted of a shed about 36 feet in length by 15 feet wide, open in front, with a lean-to roof about eight feet from the ground; it has been used as a lumber room since the transfer of the manufacture to his new premises. The explosion took place in this shed, which at the time contained some old earthenware jars formerly used in the manufacture of the fulminate, (which had been there ever since the manufacture had been discontinued,) a large quantity of straw at one end, and an old cart; some slates which had fallen from the roof and some loose bricks were lying about on straw which was scattered on the ground or floor of the shed. Extending along the further side of the shed there is a low brick-built ledge on which the jars stood when the fulminate was being made there. Mr. Hinks kept fowls in the yard on which this shed opened, and they had made nests in the straw and laid their eggs there. Joseph Corfield, the deceased, a boy aged 14, was Mr. Hinks' grandson, and lived with him in the house adjoining the works, and it appears was in the habit of searching among the straw for eggs. About a quarter past eleven on the morning of Sunday, the 14th May, he went into the yard, and shortly afterwards a loud report, as if a cannon had been fired there, was heard by Mr. Hinks' servant, who immediately went out and found the deceased lying unconscious on the straw in the shed, with his right foot blown off, and otherwise injured. He never rallied, and died in about an hour, having given no account of what had occurred. His foot was not found, having apparently been blown to pieces. There was no smoke to be seen, and the straw had not been set on fire; and except that a few more slates had fallen in from the roof no damage had been done to the shed, and the cart standing near where he was lying was uninjured.

Cause of explosion.

I visited the works on the afternoon of the 18th May, after the contents of the shed had been disturbed, and there was nothing to show the exact spot where the explosion

[C.—1599.] *Price* ½*d.*

had taken place. Nevertheless, the cause of the occurrence may, I think, beyond all doubt be correctly assigned. In order, however, to explain how it occurred, it will be necessary to describe briefly the process of making fulminate of mercury.

About 4 lbs. of mercury having been dissolved in nitric acid, the solution is poured into a large earthenware "making" jar, (about 4 feet 6 inches in height by 2 feet in diameter at bottom, gradually increasing to 2 feet 6 inches in diameter near the top, and capable of holding 50 or 60 gallons), and methyllated spirit is then added. Heat is evolved from the mixture as the conversion to fulminate takes place, and after some time it begins to boil, and gives off fumes consisting principally of nitrous ether; these fumes escape through a large hole in the top of the jar into an earthenware pipe which communicates with several "condensing" jars or condensers (about 2 feet high by 15 inches in diameter), connected together by pipes, and pass through them in succession. The fumes carry with them some of the fulminate and a considerable quantity of metallic mercury; and these are all deposited in the condensers, the fumes becoming liquid and being drawn off by means of taps from time to time, and the fulminate adhering in a solid form to the interior of the jars interspersed with globules of metallic mercury. As long as the fulminate remains wet it is absolutely uninflammable, but if suffered to become dry on the inside of the jar, it would be very dangerous, owing to its extreme sensibility or liability to explode on being touched when in a dry state. Hydrochloric acid has the property of destroying fulminate of mercury, and is used for cleaning the converters to prevent accumulation in them, the metallic mercury being afterwards washed out with warm water. After two or three hours (varying according to the temperature of the air at the time) the boiling in the making jar subsides, the process being then complete; water is now poured in and drawn off into pans from a tap hole in the bottom of the jar, carrying with it the fulminate. The fulminate is always kept and transported in water.

Among the contents of the shed when I examined it there was an old condenser which had been recently broken into four pieces; on putting these together they formed a complete jar. There were evident marks of an explosive of the nature of fulminate having been lately burnt on the inside of the pieces, and many globules of metallic mercury still adhering to them. No explosion of fulminate could have taken place within the jar, for it would have been broken into small fragments instead of into four large pieces: the jar had therefore, I assume, been broken before the explosion took place. Further, the explosion could not have been caused by the deceased treading on the fulminate while still attached to the jar, for that piece of the jar would have been blown to atoms.

That the explosion was, however, that of a fulminate, there is no doubt. The effect produced by a fulminate is very violent in its immediate neighbourhood, and at a distance it is comparatively little felt, and the more closely it is confined, the greater is the power exerted by it. In this case the right foot and boot were blown to pieces, (small pieces of the boot only were found), while, except a few slates being displaced from the already damaged roof, no harm was done to the shed, and although the pieces of the broken jar were lying near enough for an explosive on them to be ignited, they were not broken up by the explosion; the straw lying about was not set on fire. That it was the explosion of a fulminate is thus beyond all question, and that the fulminate was closely confined under the deceased's right foot is, I think, also evident. The conclusion, therefore, is that the explosion was caused by his treading on some detached fulminate on some other hard substance, such as a brick or slate or the raised ledge at the side of the shed.

There is no difficulty in accounting for the presence of detached fulminate in the shed, for when the condenser was broken doubtless a portion of the fulminate inside was scattered about. Whether the boy broke the condenser himself or not, there is nothing to show; but as he had on boots recently soled with small projecting iron nails in them, it is reasonable to suppose that he may have slipped while climbing about on the cart which was near to where the condenser stood, and that in falling he upset and broke it. If so, probably the fulminate which thereby became detached from the condenser, adhered to or got under his right boot, and was fired by his stepping on some hard substance immediately afterwards. Of this, however, there is no evidence. The quantity under his foot may have been less than half an ounce.

The primary cause of the explosion may therefore be stated to be the condenser having been left about five years ago in the shed with fulminate adhering to its interior, and the explosion was ultimately brought about by the fracture of the condenser.

Mr. Joseph Hinks, son of the proprietor of the works, and by whom the fulminate is now made at the Stechford factory, was present while I examined the shed, and gave me

every assistance in his power. He stated that when the manufacture was discontinued at the chemical works several of the jars were left in the shed, and that those so left were thoroughly treated with hydrochloric acid and properly washed. He said that several of the condensers had since been used for other purposes, without a suspicion that they might still contain fulminate. At the time of my visit there was only one other condenser in the shed; on examining this I found globules of mercury still adhering to the interior, but I could not detect any fulminate. It was clear, therefore, that although it might have been treated with acid, that particular condenser had not also been properly washed. Mr. Joseph Hinks accounted for the explosion by suggesting that some of the fulminate had got into the pores of the jar, and that the deceased had kicked against the jar and fired some of the fulminate which had exuded to the exterior; but this opinion is not borne out by the evidence in any way. There were no signs of any fulminate in the pores, and the jar would have been broken into small pieces in the immediate neighbourhood of the place. Moreover, the injury to the foot was undoubtedly caused by fulminate closely confined underneath it. This theory cannot therefore be accepted as at all probable. The only reasonable explanation is that some of the fulminate, which the appearance of the fragments proves to have been in the interior of the jar, was detached therefrom and was afterwards trodden upon by the deceased.

General remarks.

As to whether blame can be imputed to any one for this occurrence, I have the honour to state that I consider that Mr. Hinks, the proprietor, should have satisfied himself that none of the jars left at the chemical works contained any fulminate. I have no doubt that Mr. Joseph Hinks supposed that all the jars were thoroughly treated with acid and properly washed out, but the fact of there being metallic mercury in both the jars remaining at the time of my visit shows that those jars at any rate had not been properly washed out. One of them seems to have been treated with hydrochloric acid, as I could find no fulminate in it; the other, viz. that which contained the fulminate, had, I assume, been omitted to be so treated. On the other hand, it was impossible to see into the jars, so that it would have been difficult for Mr. Hinks to discover, without breaking them, whether the purification had been effected or not. The amount of blame, therefore, to be attributed, cannot, in my opinion, be said to amount to such culpable negligence as would justify a verdict of manslaughter, and this opinion I expressed to the coroner. The jars had been to a certain extent cleansed—some perhaps effectively, but one at least so imperfectly that it still contained fulminate.

The jury returned a verdict of accidental death, with which, under the circumstances of the case, I quite concur.

I have, &c.,
A. FORD,
Major, R.A.,
H.M. Inspector of Explosives.

The Right Honourable
The Secretary of State,
Home Department.

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REPORT

TO

THE RIGHT HON. THE SECRETARY OF STATE FOR THE HOME DEPARTMENT,

ON

The Circumstances attending an Explosion of Gunpowder, at a Gunpowder Factory at Herodsfoot, Liskeard, Cornwall, 12th May 1876,

BY

MAJOR V. D. MAJENDIE, R.A.,

H.M. INSPECTOR OF EXPLOSIVES.

Presented to both Houses of Parliament by Command of Her Majesty.

SIR, Home Office, 26th May 1876.

I HAVE the honour to report, that in obedience to your Order of 13th May 1876, under the 66th section of the Explosives Act, 1875 (38 Vict. c. 17), I have made an inquiry into the cause of an accident by explosion which occurred on the 12th inst. at the Herodsfoot Gunpowder Factory, near Liskeard, by which three persons lost their lives. I also attended the adjourned inquest on the deceased, which was held by Mr. Glubb, coroner for East Cornwall, on the 18th inst. In accordance with the provisions of the section aforesaid, I beg to render the following report:—

The Herodsfoot Gunpowder Factory is the property of the East Cornwall Powder Company (Limited), the head offices of which are situated at Liskeard, Cornwall.

The factory has been established since 1845, the company having been a "Limited Liability Company" only since 1874.

It is favourably situated in a wooded valley, near the village of Herodsfoot, about six miles from Liskeard. The factory has recently received a "Continuing Certificate" (No. 24, dated 27th April 1876) under the Explosives Act, 1875, constituting it a "lawfully existing" factory for the manufacture of gunpowder for the purposes of that Act.

Nature and extent of explosion.

The accident to which this report relates occurred about 11 a.m. on the 12th instant. It appears to have been caused by an explosion of gunpowder in a building known as the "breaking" house, thence to have extended to a building known as the "cake" or "deposit" house, distant 55 feet, thence to the "press" house, distant 155 feet, and finally to one of the "incorporating" mills (lower group) distant 225 feet.

The accompanying plan of a portion of the factory shows the position of the exploded buildings.

The three first of the buildings above named were entirely destroyed (*see* photographs Nos. 1, 2, 3). The incorporating mill appears to have sustained no injuries beyond the destruction or blowing off of the roof, and some damage to the inflammable portions of the mill itself. But the injury was not confined to the buildings in which explosions occurred. On the contrary, the greater part of the buildings of the factory, which occupies a total area of about eight acres, sustained more or less considerable damage, and this, notwithstanding that the "breaking" and "cake" houses were situated in excavations which appeared to afford very considerable shelter in nearly every direction, while the whole valley along which the factory is disposed is well wooded with trees of substantial size. Before proceeding to treat more particularly of the accident it may be useful if I place on record the damage actually caused by the explosion.

Detailed description of injury caused by explosion.

Three lives were lost, viz., those of William Leeman, Anthony Hocking, and Joseph Jeffery. The two former were mortally injured in the breaking house, and lived for seven and five hours respectively. Jeffery was killed close to the press house, and was either dead when found or died shortly afterwards. No other persons appear to have sustained any noteworthy injury.

39653. A

[C.—1600.] *Price* 1*s.* 10*d.*

The damage to buildings and property seems to have been confined to the factory itself, a circumstance which was due no doubt to the favourable position of the factory and the protection afforded by the surrounding hills. The damage to the factory buildings was as follows :—

Breaking house.—This was a stone building 23 feet long by 16 feet 6 inches wide, by 8 feet high to eaves, and with a roof about 5 feet 6 inches high. The walls were 18 inches thick and lined with wood. The roof, which was of slate, was not lined. It had a window at back and another window and a door in front. The building was built into an excavation in the side of the hill, and a mound formed by the excavated earth was erected in front of the house and thrown up at the sides to supplement the natural protection (*see* photograph No. 1). The natural and artificial mounds were from 3 to 5 feet distant from the walls of the house. The effect of the explosion, which all the evidence goes to show conclusively first occurred in this house, was to destroy the building, leaving only a portion of the back wall about 3½ feet high, some of the left wall and a coigne of the same about 7 feet high, and portions of the right and front walls. The roof and timbers were blown about in various directions, but apparently to no very great distances, though on this point it is difficult to form any very decided conclusions, and the sides of the excavation were to some extent affected. No crater was crated, and a careful examination of the effects justifies the conclusion that the quantity of powder present in the house was small.

"Cake" or "deposit" house.—This building was situated 55 feet only from the breaking house. It was completely screened from it by a substantial bank of earth, formed partly by the hill side and partly by thrown up earth from the excavation. A narrow undulating path connected the two. The building was built of stone (18 inches thick) with a roof of deal timber 4 inches thick, covered with 12 inches of clay, and over all with slates. The walls were wood lined. It had no windows and only one door, the latter being at the front end. It was in an excavation about 25 feet high at back, sloping on the right side down to about 10 or 12 feet, and having an artificial mound of 8 or 10 feet in front, and of about the same height or rather less to the left (*see* photograph No. 2). This building was not only completely destroyed, but the foundations were not discoverable, and a deep crater filled with water was almost the only thing which marked the site. The form of the excavation and banks had been considerably modified by the explosion, and a large tree which stood within the excavation was blown down by the roots.

Press house.—This building stood 155 feet from the "cake" house, from which the intervening mound (in front of the latter house) and a dip in the ground (the press house being the lower of the two) completely screened it. It was of stone, wood lined, slate roof, but without any wood ceiling. The local effect was comparatively slight. The house was thrown down, and the machinery displaced; but the foundations of the walls were not affected. There was no crater, and the neighbouring trees, although in some instances they had lost a few branches, were not much injured (*see* photograph No. 3.)

Incorporating mill.—A stone building, with felt roof and open front and back. This is distant 255 feet from the press house, and 320 feet from the "cake" house, by which latter I think it is most probable it was exploded. A partially worked charge was in the mill at the time, and it was fired, causing the destruction of the roof, and some damage to the woodwork of the mill. A mill separated from this one by a double wall and intervening water wheel was not exploded.

The damage done to other buildings of the factory was as follows :—

Empty cask house, 100 feet from press house, and 280 feet from cake house, unroofed (*see* photograph No. 3).

Granulating house, distant 230 feet from press house, and about 300 feet from cake house, unroofed, and windows and doors blown in and two large roof beams cracked through.

Sifting house, distant 370 feet from press house, and about 500 feet from cake house, had a window broken and some injury to the slate.

The "glossing" house, about 190 feet further away, had a few slates disturbed and door broken.

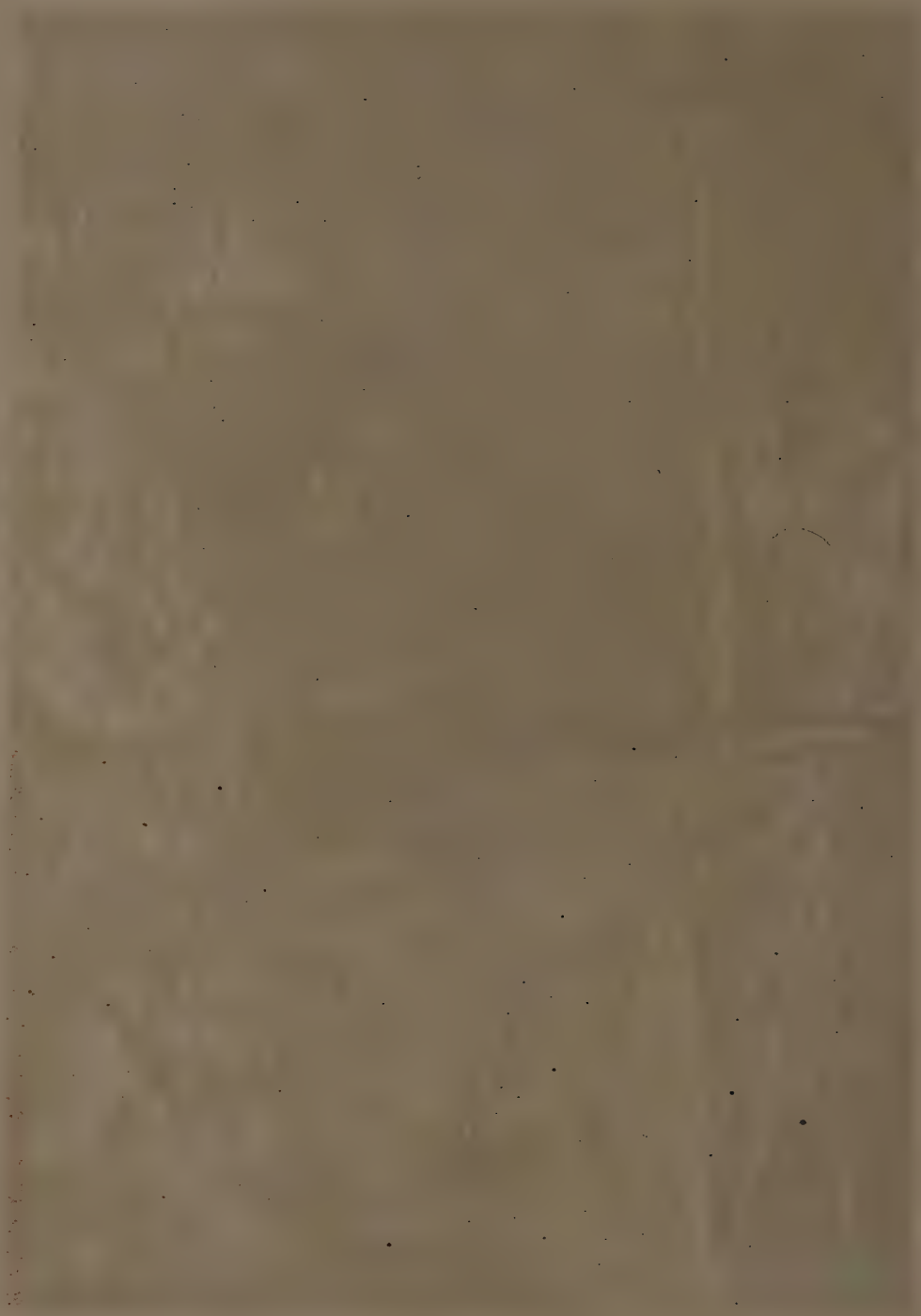
There are no other buildings in a S.E. direction.

Stove (eastern), 430 feet from press house, and 560 feet from cake house, had a large number of the slates blown off or disturbed, the plaster ceiling fractured so as to admit daylight, some window frames broken, and sashes blown in.

EMPTY CASKS
BREAKING HOUSE
POND
PRESS HOUSE
CAKE
RIVER DARWEN
MILL
MILL
COOPERS STORE
COOPERAGE
MANAGER'S HOUSE
Scale of feet
0
100
200
300

From a Photograph.

Dangerfield. 22. Bedford St Covent Garden.



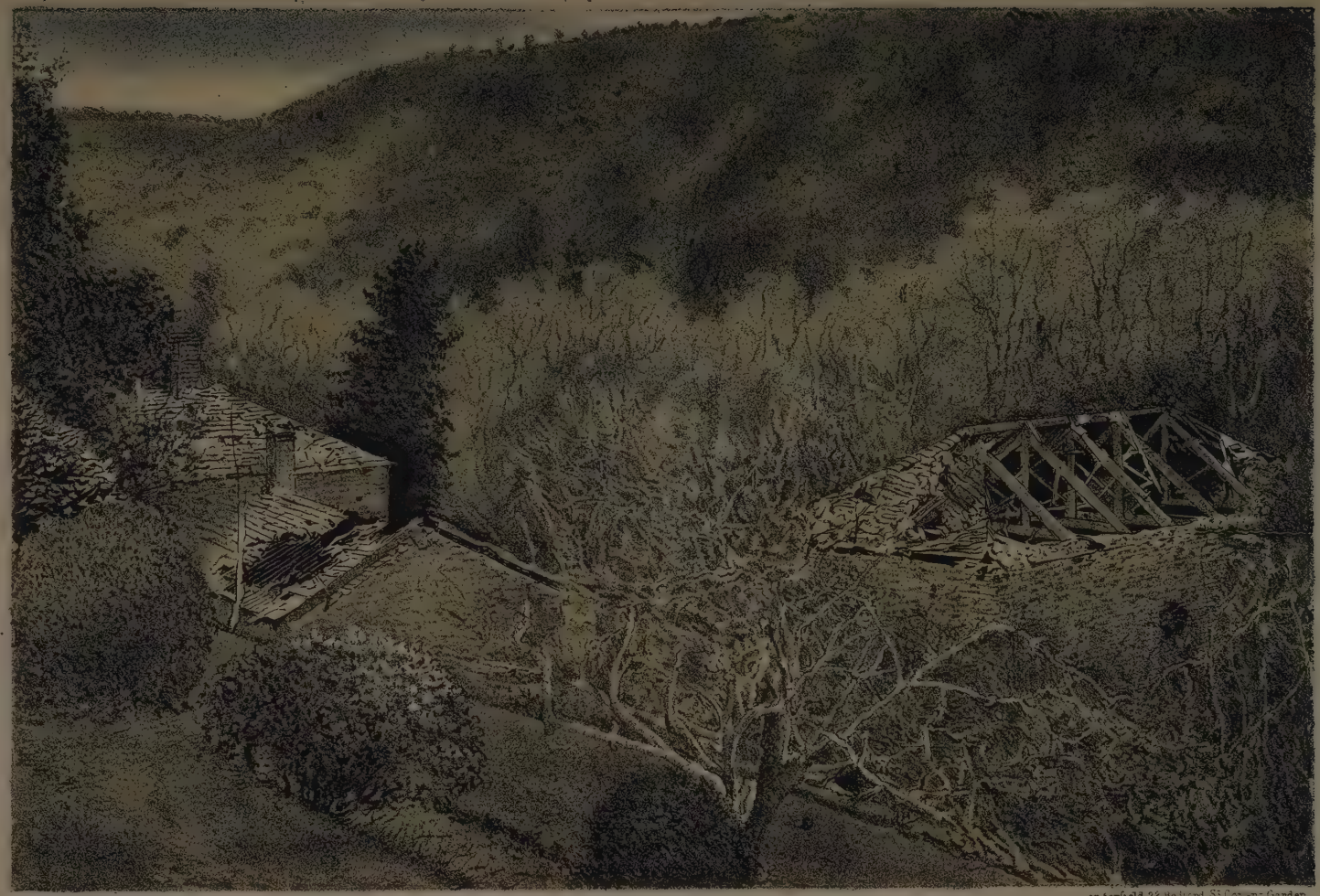
Nº 2.

From a Photograph.

Langenfield 22 Bedford St Covent Garden

From a Photograph.

Dangerfield & Swallow, 5 Vere Street.



From a Photograph

Langenfield. 22 Retford St Covent Garden.

Nº 5.

From a Photograph

Dangerfield 22 Bedford St Covent Garden

Stove (western), 320 feet from press house, and 450 feet from cake house, about the same damage as stove above mentioned.

Boiler house (between two stoves), roof a good deal damaged.

Packing house, 150 feet from press house, 330 feet from cake house, almost entirely unroofed, windows and sashes broken, door broken in.

Charge house, 400 feet from press house, 530 feet from cake house, and well protected by mounds. Slate roof slightly injured. No other damage.

Stable, a few feet further off, window broken in.

Cooper's shops and office, 280 feet from press house, 320 feet from cake house, and without any intervening protection except from trees, had nearly the whole of the window frames broken or blown in. Roof very much damaged (*see* photograph No. 4).

Cooper's stores, 240 feet from press house, and 295 feet from cake house, and without any intervening protection except from trees, was still more seriously damaged, one of the principals of the roof and several of the beams of the ceiling being broken. Damage to windows and roof (*see* photograph No. 4).

Foreman's (Mr. Lobb's) house, 285 feet from press house, and 250 feet from cake house, and standing about 30 feet above on a sort of terrace, and upper parts exposed to full blast of explosion from cake house was the most damaged of all the buildings, except those which were actually blown up. The roof and several of the joists were completely destroyed, the window frames were nearly all blown in, the ceilings were destroyed, doors were split in two, the beams of kitchen ceiling were broken, and the floors of the upper rooms appeared to be unsafe. A good deal of damage to crockery, &c. The house nearly uninhabitable. The walls (stone) do not appear to have been seriously shaken (*see* photograph No. 5).

Store magazine, about 530 feet from cake house, had some slates shaken and blown off, and a door frame slightly injured. The wood ceiling inside damaged, apparently by atmospheric disturbance created under the roof.

The other buildings in the factory, distant from the cake house 430 feet and upwards, did not sustain any material damage, but scarcely any of them, even at the distance of from 700 to 800 feet escaped without some mark of the occurrence.

Summary of observations as to extent of damage.

It will be observed from the foregoing that the accident was of an extended character, producing noticeable effects radiating forth from the cake house as a centre to a distance of about 700 feet to the S.E. (glossing house), of 530 feet to W. (store magazine), of 330 feet on E. (packing house), and of 700 to 800 feet on N. (mixing house and charcoal mill); but the more serious damage did not apparently extend beyond a radius of from 300 to 450 feet, and even the foreman's house at only 250 feet, and exposed to nearly the full blast and on higher ground was not, as might perhaps have been expected, actually blown down, and although very much damaged sustained no injury as far as the walls were concerned.

It may, however, be taken generally that up to a distance of 450 feet, damage which may be called serious was effected.

The observation of these effects is of little or no value unless it be supplemented with some estimate of the amount of exploded powder by which they were produced. After a careful examination of those who are most likely to have been able to form an opinion, including the foreman, I have arrived at the conclusion that the quantity which exploded in the cake house was probably about four, or at the outside five tons. In the breaking house it was certainly, to judge from the local damage, very small, perhaps two cwt.; in the press house it probably did not exceed twice that amount, if so much; in the mill it was I believe only one charge, *i.e.*, 60 lbs., and that not fully worked. So that the really important explosion and the one by which the major part of the damage was almost certainly produced was that of the cake house, which I believe may be pretty confidently estimated as having contained not more than five tons, and probably not more than four or $4\frac{1}{2}$ tons. This building was thoroughly well screened on all sides, except towards the north, where the bank was low, and in the direction of the foreman's house (N.W.) the protection was slight, the whole of the upper part of that house at any rate being quite above the protection of the slight bank and of the intervening trees. Seriously as this house was damaged it appears remarkable that it did not under the circumstances sustain more considerable injury, and the fact that it did not do so, particularly when the fact that the set of the wind was in that direction is considered, while partially explicable by the protection afforded to the lower portion by the embankment and by the solid character of the stone walls of the house itself, seems to favour the view that the quantity was if anything rather under than over five tons.

Circumstances under which explosion occurred.

I have now to consider the circumstances under which the explosion occurred.

I have stated that it first broke out in the breaking house, and extended after an appreciable interval, probably of at least 10 to 15 seconds, to the cake house. This is confirmed by a good deal of testimony. For example, two men (Verran and Edgar Lobb) were in the cake house when it occurred. They are both alive, and have stated to me that they were able on becoming aware of the explosion in the breaking house to run a distance of 80 or 90 yards before the cake house "went," when the shock from the latter explosion blew them down. Also the foreman (Mr. Lobb) saw the breaking house go, and had time to run away and screen himself before the great explosion; while his wife and two daughters had time to get to the door of their house after the first (breaking house) explosion, and before the cake house "blew up." I caused one of the men (Edgar Lobb) who escaped from the cake house, to run the distance which he actually traversed during the intervals between the explosions of the breaking house and cake house, and I timed him. He did it in 13 seconds, and it is therefore impossible to doubt that at least this period must have elapsed between the explosions of these two houses. The explosion of the press house almost immediately or simultaneously occurred, and that of the mill a second or two afterwards. Mr. Lobb, the foreman, told me that he was aware of four explosions, the first of which ("breaking" house) and the last ("mill") were comparatively slight. The really formidable explosion was that of the cake house, which practically nearly or quite formed one with that of the press house.

nference s to the anner in hich the xplosion roceeded om house house.

The fact that an appreciable interval of time occurred between the explosions of the breaking and cake houses shows, I think unmistakeably, that the latter explosion was a communicated one, and did not originate independently in the cake house. The fact that the interval of time was of the duration of some seconds appears to warrant the inference that the communication of the explosion did not proceed from the *flash* from the exploded breaking house, but was due to some ignited particle which was projected up to or towards the cake house, and falling on some powder or powder dust in the immediate vicinity of that house, produced its explosion. The fact that the cake house was not exploded by the flash is also supported by the circumstance that, as already stated, there were two men in the cake house when the breaking house exploded, and both these men were able to effect their escape uninjured. Had they been within the "range of flash" of the breaking house it is certain that they must have sustained injury. The strong construction of the cake house would render in the highest degree improbable the projection through the roof or sides of ignited débris from the breaking house, and it is worthy of record in connection with this point that the two men who escaped from the cake house have testified to the absence of any destruction of or injury to that building before they escaped from it. I think it is therefore a most reasonable inference that the fire was communicated through the open doorway of the cake house. As to the precise mode in which this fire was communicated it is not possible to pronounce with certainty. But it should be noticed that the two buildings, which were separated from each other by a substantial mound higher than the eaves of either building, were connected by means of a slightly undulating path, cut through the embankment, and narrow, being in parts not more than about four feet wide; and Edgar Lobb who was standing at the door of the cake house when the breaking house exploded, and who had time to call out to his companion (John Verran) who was within the cake house, "Look sharp, Johnnie, the break house has gone off," states most distinctly that he saw smoke and fire come up the narrow path. It is, therefore, easy to suppose that some of this fire reached a part of the path within a short distance of the cake house, and the weather being very dry, and the path (as Verran stated to me) not having been watered by him that morning,* the fire may easily have travelled along the path as along a gunpowder train, to and into the cake house, or a piece of ignited débris or press cake may have fallen on the path near the door of the cake house, and John Verran states that he heard a "lot of stuff rattling about the house." In one or other of these two ways the communication of the explosion was, I should say, almost certainly effected, and I venture to think it probable that if the ground had been wet in the neighbourhood of the cake house, there might have been only a single explosion to record. If this be so, it furnishes another example of the great importance of enforcing a strict and unfailing attention to the rule which is adopted in most gunpowder factories of requiring the platforms and immediate neighbourhood of the powder buildings to be kept well watered.

I have next to consider in what manner the press house and mill were exploded. The explosion of the press house seems to have occurred almost *immediately* after that of the

* He had in the discharge of his duty watered the ground in front of the breaking house just before, and was about shortly, he says, to water the ground near the cake house.

cake house. Indeed, Verran and Lobb, who were knocked down by the explosion of the cake house, had no knowledge of any further or independent explosion in the press house, and there is other testimony, as I have already stated, to the almost simultaneous occurrence of the two explosions, testimony which is supported by the fact that Jeffery, who was engaged in the press house, and who had not (according to Verran and Lobb) left it before the cake house explosion, was found a few feet only away from it, apparently at the spot which he had succeeded in reaching in the effort to escape. This fact would perhaps favour the idea that the press house was fired by the breaking house direct, and not by the cake house, and that the explosion was brought about by the same means as that of the cake house, viz., by fire in some form reaching to the dry powder-impregnated ground near to the press house. It is at any rate certain that the press house was not destroyed or apparently injured by the flash or concussion of the first explosion, for both Verran and Lobb in effecting their escape from the cake house ran nearly up to it and were able to observe it and even to call out to one of the deceased (Jeffery) who stood at the door of it. But although it is not unreasonable to believe that the explosion of the breaking house fired almost simultaneously and in the manner suggested both the cake and press house, it is I think more probable that the press house was actually exploded by the cake house, possibly by a piece of ignited press "cake" being projected over the embankment which separated the two into the door of the press house, or through a gap in the light slate roof with which that building was furnished. It is worthy of notice that a considerable quantity (it is said over ¼ cwt.) of unconsumed press cake was picked up after the explosion in different parts of the works, and this is far more likely to have proceeded from the cake house, where the quantity was large, than from the breaking house where it was small and the explosion comparatively feeble. It seems reasonable to believe that either Verran or Edgar Lobb as they ran towards and almost up to the press house would have observed any fire which might have been about that house, and which if the explosion were communicated from the breaking house must almost certainly have been present; but they observed nothing of the sort, though both of them saw Jeffery standing at the door of the house and spoke to him. On the other hand, on the explosion of the cake house the débris and pieces of press cake, some ignited and some not, would be projected with the rapidity of a projectile from a gun, and it is, I think, most probable that the same impulse which overthrew Verran and Lobb as they were running away conveyed past them or over their heads the burning fragment, whether of timber or press cake, which fired the press house.

That the incorporating mill was exploded by the cake house explosion I have little doubt. Not only was there a slight interval of time after the explosion of the press and cake house, such as might have been expected under the circumstances (the buildings being 320 feet apart), but the explosion in the press house was evidently of so slight a character that I doubt if any burning débris was projected therefrom to so great a distance as 255 feet (the distance of the mill from the press house). On the other hand, the violence of the cake house explosion was great, and fragments were picked up at considerably greater distances than the 320 feet which intervened between the cake house and mill.

Conclusion as to manner in which explosion proceeded.

A careful consideration of all the circumstances brings me therefore to the conclusion that the explosion most certainly originated in the breaking house, that it was communicated to the cake house by means of ignited fragments falling at or near that house, that the cake house in its turn caused the explosion of the press house and mill, by the projection of burning débris. The resulting damage and loss of life have been recorded above.

Cause of explosion.

As regards the cause of the disaster, we are fortunately in this instance in possession of a very clear and distinct statement made more than once by one of the deceased before his death, to the effect that the accident arose in a particular way; and this statement not only coincides with the probabilities of the case, but presents the particular explanation which in the absence of any such statement could hardly have failed to suggest itself as the correct one. In inquiring into the causes of explosions, the direct evidence as to which is frequently very slight and often owing to the deaths of all concerned almost nil, I have generally found it best to adopt the course of setting down all possible causes, including the more as well as the less improbable, and then proceeding by the light of such information as may be procurable to eliminate one by one the various suggested causes, until there is left one or more probable explanations of the occurrence to choose between. In the present case my inquiries easily led me to the conclusion that it would be unreasonable to seek among such causes as the presence of

artificial lights, smoking, lucifer matches, spontaneous ignition or lightning, for an explanation of the accident. As to lightning, there was none that day; as to artificial lights, it was broad daylight; there could be no reason whatever for violating the established rules of the factory in this direction; as to smoking, the witnesses whom I examined asserted most positively that the rule against smoking is one which is strictly and invariably observed by the men on the works, and Verran had himself been engaged in the breaking house a short time before the explosion and declares that there was no smoking going on, other witnesses were about this house that day and saw no smoking, and I cannot doubt that if there was any habitual disregard of this rule my inquiries would have elicited it, while any exceptional disregard of so important a rule by either Leeman or Hocking (the only persons in the breaking house at the time of the explosion) would scarcely fail to have attracted attention, seeing that the workpeople were constantly coming and going about this house. Similarly, there seems no reason to suppose that the presence of lucifer matches caused the explosion. I directed my inquiries very specially and closely to the observance of the rule against pockets in the working clothes, and not only does this rule appear to have been observed, but more than one witness spoke to both Hocking and Leeman having had on their proper working clothes on that day. I also examined the clothes of some of the men and found them without pockets. Similarly, I was unable to discover by the closest inquiry that there were any reasonable grounds for supposing that the men neglected to wear the magazine boots provided for their use in the danger buildings; while as to spontaneous ignition, there was no machinery in the breaking house, and consequently there could be no sort of reason for the presence of oiled cotton waste or similar articles liable to ignite spontaneously. The foregoing possible causes may therefore I believe be confidently dismissed, and we are justified in proceeding to the consideration of the statement made more than once by Leeman before his death to which I have above referred, and which was distinctly and emphatically to the effect that the "fire" had been struck by his mallet while he was carrying on his work of breaking. He made this statement in different words to different persons including the men who carried him away, the doctor, a clergyman, and the secretary of the company (Mr. Isaac).

I am aware that on similar occasions men have made similar statements which were demonstrably incorrect, proceeding no doubt from the difficulty at so supreme and tremendous a moment of distinguishing nicely between cause and effect. Thus, after the explosion which occurred at Messrs. Wakefield and Co.'s Basynghyll Mills in January last, two men who were working in different sides of the mill each declared quite positively that he had caused the accident by striking fire with his mallet. It is quite unreasonable, I should say, to suppose that two men both struck fire with their mallets at exactly the same instant of time, and I have no doubt that one of these men had confused cause and effect, and was mistaken. But in the present case not only was there no such contradiction, but the explanation, as I have said, is on the face of it a most probable one. The operation in which these men were engaged was that of breaking up the press cake, preparatory to placing it in the "corning" sieves for reduction to grains. The operation, in fact, is incidental to and forms part of the operation of granulation (by the old system of "corning") which is carried on in another building In order to break up the press cake, it is placed upon blocks of hard wood (lignum vitæ) and struck with mallets of the same. In former reports on accidents in powder factories I have had occasion to remark on the danger which attends the application of percussive force to gunpowder, even in a moderate degree, if the surfaces be hard and unyielding, and the thickness of powder be small. The amount of heat which may under such conditions be generated by percussion is in excess of what is necessary to explode gunpowder. In proportion as the surfaces are soft, this risk diminishes in a rapid ratio. But on stone, or iron, or brass, a blow may certainly be struck of a force sufficient to explode powder. How very slight a blow may under particular conditions produce such a result, is, I believe, not generally known, and as the point is of importance I venture to reproduce here an extract from some "Plain Hints" on the management of magazines and powder buildings which I drew up some time ago, giving the results of some actual experiments made in the Royal Arsenal on this point:

"Heat sufficient to fire gunpowder and other explosive substances may be produced "by percussion or friction, without the presence of any spark or flame, or other visible "indication of heat. This important fact is not sufficiently known or acted upon*

* "Too much stress cannot be laid upon the fact that gunpowder can be exploded either by a blow or by "friction; this forms a clue to most of the precautions which should be taken in dealing with it. War Office *Treatise on Ammunition* (1874), p. 8.

"That it is a fact, has been shown by several experiments, of which the following "are examples :—

"A 25lb. weight was allowed to fall 2 feet upon small packages of gunpowder, "consisting of about 5 grains of Government powder wrapped in tinfoil (so as to "exclude the possibility of a spark reaching it).

"The packages were placed between two metal plates and the blows struck as follows :—

Material of Plates.	No. of Blows.	No. of Explosions.
Both plates steel	10	10
One plate steel, one plate brass	10	4
Both plates brass	10	2
Both plates lead	10	No explosion, even when the fall was increased to 40 feet.

"In the official War Office *Treatise on Ammunition* (1874), pp. 8, 9, the following "results are recorded :—'Experiments carried out in the Chemical Department of the "'Royal Arsenal showed that a 50lb. weight falling 36 feet on a surface of one inch "'square, the surfaces being brass, having mealed powder $\frac{1}{20}$th inch thick spread "'between them, exploded the gunpowder. The same weight falling on a surface "'of $\frac{1}{4}$ of a square inch exploded the powder with a drop of 10 feet. This result "'coincides as nearly as possible with what would be expected. Having diminished "'the surface by $\frac{1}{4}$ we should have anticipated an explosion with a fall of $\frac{1}{4}$ of that "'it previously required; in the foregoing experiment we should therefore have "'expected it to explode with a fall of 9 feet, while it actually required 10. The "'important fact to remember is, that the more we diminish the surface the more "'readily will the powder explode; thus, if in the above experiment we diminished "'the surface to the $\frac{1}{36}$ of a square inch, we should expect the weight to explode it "'with a drop of 1 foot.'"

When so slight a blow on hard surfaces suffices to produce the explosion of gunpowder (without, be it observed, any spark or visible form of heat), it is impossible to say that some indefinite augmentation of the blow between two very hard wooden surfaces would not be liable to produce a similar effect, and I think it is not inconceivable that a blow of exceptional or accidental violence may have produced the explosion in this instance. But I am decidedly of opinion that it is much more probable that the explosion was brought about, not by a simple blow but by the presence on the wooden block or mallet, or in the powder of some particle or particles of grit, by which the force of the blow was localized and intensified to the extent of causing heat sufficient to fire the powder. I would here call attention to that part of the foregoing extract from "Plain Hints," which relates to the effect of reducing the surface, and I would add another extract on the same subject from the War Office *Treatise on Ammunition*.

"If any grit or sand is allowed to collect, the danger becomes great, as grit is harder "than any metal, and the sharp points coming into contact with powder dust would "be just the most favourable conditions for an explosion."*

The danger of grit in powder buildings is however so generally recognized by all persons who are at all familiar with the subject that it is scarcely necessary to elaborate the arguments on this point, though I have thought it desirable to indicate the *rationale* of this risk. Thus, then, we have one of the deceased asserting that the explosion was caused exactly in the way in which even without grit it would be not impossible, and with grit would be in the highest degree probable, and ultimately indeed almost inevitable.

As to the possibility of the presence of grit.

The question remains in what manner would it have been possible or probable for grit to have found its way under the mallet? To this question I think a complete and satisfactory answer may be given. There are several ways in which grit may be introduced into a powder building.

(*a*.) It may be introduced on the shoes or clothes of the workpeople.

(*b*.) It may be introduced on the tools, if these are deposited in positions where they could contract grit.

* Treatise on Ammunition, p. 9.

(*c.*) It may be blown into the building.
(*d.*) It may be brought in on gritty barrels.
(*e.*) It may be introduced in the ingredients themselves through the incomplete sifting or searching of the ingredients before incorporation.
(*f.*) It may be accidently introduced by gritty particles falling into the ingredients after sifting and during manufacture, either (1) from the walls or roofs of the buildings, or (2) from the banks, &c. of the factory during the passage of the powder from building to building.
(*g.*) There is also the possibility of intentional introduction of grit by some evil disposed or insane person.

With regard to (*a*) it appears that the magazine boots were carefully and properly worn in the factory, a point on which I thought it my duty to make full and diligent inquiry; and so far as I could discover, the "clean floor" system has been rightly understood and acted up to. There is no special reason for suspecting the introduction of grit on the clothes of the workpeople, though it is of course impossible to say that no grit was introduced by this means, as it would be likely to be if the workpeople at any time turned up their trowsers at the bottom.

As regards (*b*) it appeared that the wooden mallets, the only tools used in the breaking house, were as a rule carefully deposited after work on the breaking table, and there seems no reason specially to suspect a departure from this practice in this instance.

As regards (*c*) it is not at all impossible that grit may have been blown into the building during the dry weather which had prevailed for some time previous to the explosion.

As regards (*d*) my inquiry so far as it went seemed to show that this risk scarcely attained appreciable proportions in this factory, where fair care seems to be taken to avoid placing a barrel into a gritty platform, or one barrel upon another.

As regards (*e*) there was no doubt a marked failure in the arrangements of the factory for effecting the exclusion of grit and dangerous foreign substances from the ingredients. Care appears to be taken by hand-picking the charcoal and turning over the saltpetre and sulphur to exclude the more apparent foreign matters which may be present, and on some occasions iron nails have been thus detected and removed, but the process of sifting which is carried out in the mixing house is performed with a sieve of so large a mesh (about two meshes to the lineal inch) that a very considerable and dangerous amount of grit might easily pass through. This was admitted by the secretary to the company, and also by the foreman, and it was not disputed that there was a failure to comply with the provision contained in section 10 § (13) of the Explosives Act, 1875, on this point, viz., "In a factory all ingredients to be made or mixed into gunpowder "shall, before being so made or mixed, be carefully sifted, for the purpose of removing "therefrom, so far as practicable, all dangerous foreign matter."

As regards (*f*) the accidental introduction of grit into the ingredients after sifting and during manufacture may have taken place (1) from the walls of the charge house which are only lined with wood about half-way up, or from the roofs of the press house or breaking house, neither of which were lined with wood, but were of bare slate. As to this there was I consider a violation in these buildings of that part of section 10 § (2) of the Explosive Act, which directs that "The interior of every . . . . . danger "building . . . . . shall be so constructed or so lined or covered as to prevent "" . . . . . the detaching of any grit," &c. (2.) Such accidental introduction of grit into the sifted ingredients may also have occurred during the passage of the semi-manufactured powder from one building to another, for it appears that between the cake house and breaking house the barrels and barrows were not covered in any way, and during such passage the barrels travelled between high narrow (four feet) banks of earth, from which a gritty particle might easily have descended into the powder. Here again there was a violation of section 10 § (10) of the Explosive Act, which directs that "any carriage, boat, or other receptacle in which gunpowder, or the wholly or partly "mixed ingredients thereof, are conveyed from one building to another . . . . . "shall be closed or otherwise properly covered over."

(*g.*) As regards the malicious or intentional introduction of grit, nothing transpired in the course of my inquiry to warrant any suspicion under this head.

It appears, therefore, that there were at least four directions whence grit was not unlikely to have reached the powder, viz.:—

(1.) Grit which had blown in during the prevalent dry weather.
(2.) Grit which had not been properly eliminated from the original ingredients.

(3.) Grit which had become detached from the walls or roofs of certain buildings, including the breaking house itself.

(4.) Grit which had accidentally fallen into the powder during its passage from one house to another.

Conclusion as to cause of accident.

These four probabilities (even if we exclude the other less probable but not impossible modes above glanced at by which grit may have entered the building) together amount to what must be considered an active risk, and when taken in connection with the distinct statement of the deceased Leeman, that the explosion was actually caused by a blow of his mallet, afford I think a sufficient explanation of the disaster, which I believe was certainly due to the ignition of the powder in the breaking house by a blow from Leeman's hammer, such ignition having been determined by the presence of grit or other dangerous foreign matter which had accidentally become introduced into the powder under manipulation in one or other of the ways indicated above.

Consideration of question whether the accident arose from culpable neglect of proper precautions or observance of regulations.

With regard to the question of whether any blame attaches to the company or their servants in connection with this accident, it is my duty to state that the result of my inquiries points to the existence of four distinct violations of the Explosives Act.

1st. There was a violation of sec. 10 § (2) in the non covering of portions of the interior of the charge house, press house, and breaking house, and, as I have explained, it is possible that the presence of grit detached from these uncovered portions may have contributed to the accident.

2nd. There was a violation of sec. 10 § (10) in the conveyance of the powder in uncovered barrels and on uncovered barrows from the cake house to the breaking house, and to this neglect, as I have pointed out, it is possible the presence of grit may be ascribed.

3rd. There was a violation of sec. 10 § (13) in the incomplete sifting of the ingredients, and here again was an opening for the introduction of grit.

4th. There was a violation of the terms of the Continuing Certificate under which this factory was being carried on, in the excess of quantity of powder in the cake house and press house. Term 5 of that Certificate embodied the regulations contained in Part I. of the First Schedule of the Explosives Act, and the 3rd and 5th paragraphs of these regulations contain the following provisions, " (3.) The quantity of gunpowder to be corned " or granulated at one time in any corning or granulating house shall not exceed twelve " hundredweight. (4.) The respective quantities to be at any one time in any . . . . . , " corning or granulating house shall not exceed twice the respective quantities hereby " allowed to be . . . . . corned or granulated at one time . . . . . and for the " purposes of this provision any building used with any such . . . . . corning or " granulating house . . . . . shall be deemed part thereof, save only magazines " constructed with stone or brick and situate forty yards at least from every such . . . . " house as aforesaid (herein-after distinguished as expense magazines)."

The effect of these two paragraphs is clearly to limit the quantity of powder in any corning or granulating house and in any building used with such house and within 40 yards thereof, to 24 hundredweight in all. Now, the cake house was obviously " used with " the breaking house, it was not distant 40 yards (but only 55 feet 18⅓ yards) therefrom, and as the breaking house was, in fact, a preliminary corning house in which the first stage of the process of granulation was carried on, it follows that the quantity of powder in the two houses together could not lawfully exceed 24 hundredweight; but as a matter of fact the quantity in the cake house alone was somewhere between four and five tons. In this respect, therefore, I hold that there was a distinct illegality, and if my view of the steps by which the explosion proceeded be correct, this illegality probably contributed to extend the disaster to the press house (by the explosion of which Jeffery lost his life) and to the mill.

Extenuating considerations.

But while calling attention pointedly to these four undoubted illegalities, to one or more of the first three of which the original explosion may possibly, I might perhaps say probably, be traced, and to the fourth of which we must ascribe the extended effects of the disaster, I feel it my duty to observe, as I observed to the coroner's jury, that the case is attended with certain extenuating circumstances which compel a more lenient view of these shortcomings of the company than could otherwise justly have been extended to them. 1st. There is the important consideration as regards the first three of the illegalities specified above, that under the old Act these

omissions would not have constituted illegalities at all, and this factory continued to be worked under the old Act until the date of it receiving its Continuing Certificate under the new Act, which Certificate bore date, as already stated, 27th April 1876. Consequently, until about a fortnight before the explosion three of the omissions which now constitute illegalities were not matters of statutory obligation at all, but depended upon the views of particular manufacturers. This remark may suggest the observation that such points as the lining of the buildings, the covering of the powder in transit, and the thorough sifting of the ingredients, were at any rate precautions of so generally recognized a character that a prudent manufacturer would not neglect them, whether compelled to their observance by statute or not. But to this the reply may be made, 1st. That the views of manufacturers frequently differ on details of precautions, and until a few years ago precautions which are now so generally recognised as to have found a place in the Explosives Act were not by any means matters of universal agreement. 2nd. That during the past few years the proprietors of this factory have shown great readiness to carry out improvements, and by an outlay of no niggard character have raised their factory from the condition of dangerous neglect in which I found it at my first inspection in January 1872, to one in which there may be said to be a general regard to established and known precautions. The three houses which I have named as partially uncovered inside, are I believe the only powder buildings still remaining even partially uncovered internally; whereas in 1872 I doubt if there was a single powder building in the factory properly lined; the powder is covered up in its transit from the different parts of the factory, except for the short space of a few yards from the cake to the breaking house; and the sifting of the ingredients is a question really of degree, of size of mesh or sieve, and the company had at any rate voluntarily adopted the precaution of subjecting the ingredients to a certain sifting process, although unfortunately they had employed a sieve of too large a mesh to do the work thoroughly, and in such a way as the new Act contemplates.

As regards the illegality of having an excess of powder in the breaking and cake house, there is not the same excuse to be made, for this regulation formed in fact one of the requirements of the old Act. But there is at any rate this to be said, that the cake house had been voluntarily provided especially to relieve the working buildings of accumulations of powder, that substantial traverses had been erected between the press house, cake house, and breaking house, that the company had so regarded the cake house as an expense magazine to the press house (from which they had placed it the required distance), that they had overlooked its immediate connection with the breaking house, and probably had not fully realised the fact that the breaking house being in fact a house in which an operation of corning was carried on was controlled by the rules as to quantity applicable to corning and granulating houses. Nor had the proximity of these buildings called for challenge by either the late Capt. Smith, by Capt. Ford, or by myself, in the course of our inspections, because it appears that the quantity found in the buildings on those occasions has been invariably within the limit.

These considerations, warrant, I think, a less unfavourable view of the shortcomings of the company in regard to the illegalities which I have noticed, than the recital of those illegalities and the statement of their probable bearing upon the cause and effects of this explosion would naturally suggest. And from my knowledge of the past efforts of the company to carry out improvements in the factory and to adopt such measures as might be suggested for eliminating known elements of risk, efforts which I have before had occasion officially to recognize, I venture to anticipate with confidence that the intimation which this accident and the resulting inquiry have so pointedly conveyed that alterations are required, will be sufficient to ensure their immediate and ungrudging adoption. Indeed, the secretary of the company has already expressed his intention of proposing the re-arrangement of certain of the buildings, and some modifications in the system of manufacture tending in the direction of increased safety; only one of the two houses which were in objectionable proximity will be re-erected; the rude, and as I venture to think, in some respects dangerous mode of breaking up the press cake by percussion* will be discontinued; an effort will be made to adopt a method of working which will entail the employment of fewer workpeople on certain of the dangerous operations; and the particular illegalities above noticed will be forthwith rectified, and such improvements effected in the construction of the buildings as may be practicable. I have also suggested to the secretary of the company that the preparation and submis-

* I believe this is the third or fourth accident which has occurred in "breaking houses" in Cornwall—one of which occurred some years ago in this factory. The operation is not one which is commonly adopted; indeed out of Cornwall it is very rarely resorted to.

sion for approval under Sec. 11 of the Explosives Act of suitable "Special Rules" for the guidance of the workpeople should be no longer delayed.*

I may add that the verdict of the coroner's jury was one of "Accidental Death," and under all the circumstances of the case this verdict appears to me to have been a just and proper one.

I have, &c.,
V. D. MAJENDIE,
Major, R.A.,
H.M.'s Inspector of Explosives.

The Right Honourable
The Secretary of State,
Home Office.

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* The Explosives Act allows a period of three months after the receipt of a continuing certificate to elapse before these rules are made.

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For Her Majesty's Stationery Office.

MINES.

REPORTS

OF

THE INSPECTORS OF MINES,

TO

HER MAJESTY'S SECRETARY OF STATE,

For the Year 1875.

Mr. BELL, Durham District.
Mr. DICKINSON, Manchester District.
Mr. T. EVANS, Midland District.
Mr. WYNNE, North Staffordshire District.
Mr. BROUGH, South-western District.
Mr. BAKER, South Staffordshire District.
Mr. WALES, South Wales.
Mr. MOORE, Scotland, East.
Mr. ALEXANDER, Scotland, West.
Mr. WILLIS, Newcastle-on-Tyne District.
Mr. WARDELL, Yorkshire District.
Mr. HALL, Liverpool District.
Dr. C. LE NEVE FOSTER, Cornwall, Devonshire, and part of Somersetshire.
Mr. T. F. EVANS, Anglesey, Brecon, Cardigan, etc.

Presented to both Houses of Parliament by Command of Her Majesty.

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A LIST of the NAMES, ADDRESSES, and DISTRICTS assigned, of Her Majesty's INSPECTORS OF MINES according to Seniority of Appointment; and also the NAMES and ADDRESSES of the INSPECTORS Assisting. 31st March 1876.

Names and Addresses of Chief Inspectors.	Names and Addresses of Inspectors Assisting.	Districts Assigned.	
		Under Coal Mines Act.	Under Metalliferous Mines Acts.
Joseph Dickinson, Esq., Pendleton, Manchester.	J. S. Martin, Esq., Prestwich, Manchester.	MANCHESTER DISTRICT, comprising North and East Lancashire and IRELAND.	Within the Coalfield of North and East Lancashire, in Cheshire, Sussex, and Ireland.
Thomas Wynne, Esq., Gnosall, Stafford.	S. B. Gilroy, Esq., Stone, Stafford.	NORTH STAFFORDSHIRE DISTRICT, comprising North Staffordshire, Cheshire, and Shropshire.	North Staffordshire and part of Shropshire.
Lionel Brough, Esq., Clifton, Bristol.	Thomas Cadman, Esq., Newport, Monmouthsh.	SOUTH-WESTERN DISTRICT, comprising the counties of Gloucester, Monmouth, Somerset, and portions of Brecon and Glamorgan.	Eastern part of Glamorganshire, Gloucester, Hereford, Monmouth, Somerset, and Wiltshire.
William Alexander, Esq., Glasgow.	J. M. Ronaldson, Esq., Pollokshields, Glasgow.	SCOTLAND, WEST DISTRICT, comprising counties of Argyle, Ayr, Dumfries, Dumbarton, Renfrew, and portions of Lanark and Stirling.	Argyle, Ayr, Dumfries, Dumbarton, Kircudbright, Renfrew, Wigtown, and portions of Lanark and Stirling.
Thomas Evans, Esq., Pen-y-bryn, Derby.	A. H. Stokes, Esq., Derby.	MIDLAND DISTRICT, comprising counties of Derby, Leicester, Nottingham, and Warwick.	Part of Derby, Leicester, Northampton, Nottingham, Oxford, and Warwickshire.
James P. Baker, Esq., Tettenhall, Wolverhampton.	W. B. Scott, Esq., Compton Road, Wolverhampton.	SOUTH STAFFORDSHIRE DISTRICT, comprising South Staffordshire and Worcestershire.	South Staffordshire and Worcestershire.
Ralph Moore, Esq., Rutherglen, Glasgow.	J. T. Robson, Esq., Cambuslang, Glasgow.	SCOTLAND, EAST DISTRICT, comprising counties of Clackmannan, Perth, Kinross, Sutherland, Edinboro', Fife, Haddington, Linlithgow, upper and middle wards of Lanark, and part of Stirling.	Clackmannan, Edinbro', Fife, Haddington, Kinross, Linlithgow, Perth, Sutherland, and portions of Lanark, Stirling, Shetland, and Inverness.
Thos. E. Wales, Esq., Swansea.	W. Galloway, Esq., Cardiff.	SOUTH WALES DISTRICT, comprising counties of Carmarthen, Glamorgan, Pembroke, and part of Brecon.	Carmarthen, Glamorgan, and Pembroke.
Frank N. Wardell, Esq., Wath-upon-Dearne, Rotherham.	John Gerrard, Esq., Wakefield.	YORKSHIRE AND LINCOLNSHIRE DISTRICT, comprising Yorkshire, exclusive of North Riding, and Lincolnshire.	Yorkshire, exclusive of North Riding.
James Willis, Esq., Newcastle-on-Tyne.	J. B. Atkinson, Esq., Newcastle-on-Tyne.	NEWCASTLE DISTRICT, comprising counties of Cumberland, Northumberland, and part of Durham.	——
T. F. Evans, Esq., Amlwch, Anglesey.	- - - -	- - - -	Anglesey, Brecon, Cardigan, Carnarvon, Cumberland, Denbigh, part of Derby, Flint, Lancaster, Merioneth, Montgomery, Radnor, Shropshire, and the Isle of Man.
C. Le Neve Foster, Esq., Truro.	- - - -	- - - -	Cornwall, Devon, Dorset, and part of Somersetshire.
Thomas Bell, Esq., Durham.	W. N. Atkinson, Esq., Chilton Moor, Fence Houses.	DURHAM DISTRICT, comprising county of Westmoreland, part of Durham, and North Riding of Yorkshire.	Durham, Westmorland, and North Riding of Yorkshire.
Henry Hall, Esq., Rainhill, Prescot.	J. L. Hedley, Esq., Fairfield, Liverpool.	LIVERPOOL DISTRICT, comprising counties of Anglesey, Denbigh, Flint, and part of Lancashire.	

MINES CLASSED UNDER THE COAL MINES REGULATION ACT.

Summaries of the Statistics for the Twelve Districts under the Coal Mines Regulation Act, for the Year 1875.

MINES CLASSED UNDER THE METALLIFEROUS MINES REGULATION ACT.

Summaries of the Persons employed and Mining Produce for the Year 1874; Summaries of the Persons employed, Mining produce, Separate Fatal Accidents, and Lives lost by the Accidents, for the Year 1875.

Year 1875.

Summaries of the Statistical portions of the Reports of Her Majesty's Inspectors of Mines.

The Reports are each made separately to the Right Honourable R. A. Cross, M.P., Her Majesty's Principal Secretary of State for the Home Department. The statistics are collated by the Inspectors from figures supplied by each Inspector.

Coal Mines Regulation Act.

The Summaries of the statistics for the twelve districts consist of four separate documents in tabular form, showing the aggregate number of persons employed during the year above and below ground in the coal, fire-clay, ironstone, and shale mines of Great Britain and Ireland.

The 1st summary shows the number and ages of the male persons employed both above and below ground, and also the number and ages of the females employed above ground, together with the quantity of mineral raised in each of the twelve Inspection Districts.

It appears that in the aggregate 535,845 persons were employed in and about the mines already mentioned herein. Of these 427,017 were employed underground, and 108,282 (of whom 6,504 were females) employed above ground; thus showing, as compared with the respective numbers employed during the year 1874, a decrease of 2,984, namely, males 2,589 and females 395.

2nd. This summary gives the mining produce either in districts or counties, by which it appears that 133,306,485 tons of coal, 1,932,294 tons of fire-clay, 12,018,594 tons of ironstone, and 442,940 tons of shale, &c. were produced in the mines classed under the Coal Mines Regulation Act, including the quantity of iron pyrites, &c. found in working these mines, which is separately given in the respective districts to which these latter remarks apply.

Comparing the above quantities with the output of 1874, an increase is shown in coal of 6,716,377 tons; fire-clay, a decrease of 135,497 tons; ironstone an increase of 325,408 tons, and an increase also of 80,193 tons in the quantity of shale, &c.; thus giving an augmented quantity of mineral raised in all the above-named mines, except fire-clay, during the past year.

Summary No. 3 contains an account of fatal accidents and lives lost during the year 1875 in and about all the mines coming within the scope of the Coal Mines Regulation Act. The fatal accidents amounted to 927, and the deaths occasioned thereby reached 1,244, showing an increase (when compared with the summary of 1874) of 32 in the number of fatal accidents, and 188 in the number of lives lost.

No. 4, the last of the summaries classed under the said Act, shows the proportion which the accidents and deaths bear to the number of persons employed and the quantity of minerals raised.

It appears that on the average during the year under review there was one fatal accident amongst every 578 persons employed in and about the mines, and one death by accident amongst every 430 persons employed; and that for each fatal accident 159,331 tons of mineral were got, and 118,730 tons for each death by accident.

During the year 1874, of every 602 persons employed there was one fatal accident, and for every death by accident 510 persons were employed. For the year 1875, one accident has to be recorded for every 578 persons employed, and one death for every 430 persons employed. In 1874 the smaller quantity of 157,222 tons of mineral were wrought per accident, but the larger quantity of 133,251 tons per death.

In giving a synopsis of the summaries, and after making comparison with those of the preceding year, it should be stated that, whilst the Returns show a dimunition in the number of persons employed, there was an increase of 169 mines at work, and that the quantity of mineral raised exceeds that of 1874 by 6,986,431 tons.

No. 1.—Summary of Persons Employed in and about the Mines, and Tons of Mining Produce, in Great Britain and Ireland, in the Year 1875.

Names of Districts.	Underground.					Aboveground—Ages.							Total above and below ground.	Coal.	Fireclay.	Ironstone.	Shale.
	Male Persons—Ages.					10 to 13.		13 to 16.		Above 16.		Total.					
	10 to 12.	12 to 13.	13 to 16.	Above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.						
														Tons.	Tons.	Tons.	Tons.
Newcastle:																	
Cumberland	–	72	512	4,179	4,763	3	–	99	17	326	1,300	1,745	6,508	1,171,341	43,875	261	–
Durham, North	–	341	1,834	12,225	14,400	169	–	420	–	6	3,213	3,808	18,208	6,115,685	165,926	–	–
Northumberland	1	533	2,238	17,891	20,663	84	–	495	–	5	4,107	4,691	25,354	6,755,796	102,433	12,008	–
Durham:																	
Durham, South	2	1,363	5,418	40,067	46,850	461	3	1,332	–	4	9,926	11,726	58,576	19,452,664	437,300	–	–
Westmoreland	–	–	2	16	18	–	–	–	–	–	1	1	19	2,566	–	–	–
Yorkshire, North Riding	–	67	463	7,130	7,660	23	1	177	–	–	1,927	2,128	9,788	4,018	–	6,085,541	–
Manchester:																	
Lancashire, North and East	210	864	3,174	23,057	27,305	142	–	252	34	108	5,165	5,701	33,006	8,881,137	83,351	–	4,118
Ireland	–	4	48	1,017	1,069	–	–	21	–	6	448	475	1,544	128,201	6,760	300	–
Liverpool:																	
Anglesey	–	–	–	15	15	–	–	–	–	–	7	7	22	2,248	–	–	–
Denbighshire	–	120	765	5,534	6,419	9	–	93	21	87	1,473	1,683	8,102	1,381,380	29,978	19,151	–
Flintshire	–	1	428	3,837	4,266	2	–	103	–	1	1,102	1,208	5,474	965,490	891	–	2,352
Lancashire, West	6	618	2,590	21,100	24,314	66	–	464	180	1,192	5,322	7,224	31,538	9,048,914	9,561	1,000	–
Yorkshire:																	
Yorkshire	470	1,451	6,913	40,172	49,006	246	3	716	8	16	12,195	13,184	62,190	15,855,990	183,961	236,782	–
Lincolnshire (ironstone)	–	–	4	104	108	2	–	5	–	–	154	161	269	–	–	118,770	–
Midland:																	
Derbyshire	–	423	2,956	20,304	23,683	132	–	580	–	–	5,702	6,414	30,097	7,190,921	13,036	90,395	–
Leicestershire	–	65	458	3,460	3,983	18	–	74	–	–	988	1,080	5,063	1,170,460	29,585	161	–
Nottinghamshire	–	126	1,162	8,330	9,618	42	–	195	–	–	2,858	3,095	12,713	3,265,368	–	6,052	–
Warwickshire	–	49	351	3,105	3,505	4	–	83	–	–	1,012	1,099	4,604	803,851	18,848	54,092	84
Staffordshire, North:																	
Cheshire	–	49	195	1,815	2,059	19	–	45	–	–	621	685	2,744	688,865	8,200	–	1,000
Shropshire	–	74	650	4,789	5,513	–	–	64	177	758	1,205	2,204	7,717	1,225,180	32,100	464,440	2,000
Staffordshire, North	–	195	1,527	13,186	14,908	11	–	309	–	11	4,356	4,687	19,595	4,202,149	9,000	1,700,000	9,000

Summary of Persons Employed in and about the Mines, &c.—*continued.*

Names of Districts.	Underground.					Aboveground—Ages.							Total above and below ground.	Coal.	Fireclay.	Ironstone.	Shale.
	Male Persons—Ages.					10 to 13.		13 to 16.		Above 16.							
	10 to 12.	12 to 13.	13 to 16.	Above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.	Total.					
														Tons.	Tons.	Tons.	Tons.
Staffordshire, South:																	
Worcestershire and South Staffordshire	–	137	2,901	23,419	26,457	10	2	629	54	1,165	7,351	9,211	35,668	10,300,000	230,935	384,055	360
South-western:																	
Breconshire (part of)	–	13	53	589	655	5	–	8	6	50	41	110	765	99,829	4,393	64,164	–
Glamorganshire (part of)	–	40	213	1,925	2,178	–	–	11	16	38	386	451	2,629	555,997	7,518	94	–
Gloucestershire, Forest of Dean	–	62	410	3,331	3,803	8	–	89	–	–	794	891	4,694	712,053	–	–	–
Do. Bristol District	–	–	267	2,515	2,782	–	–	59	–	–	616	675	3,457	571,050	–	290	–
Monmouthshire	5	485	1,476	13,167	15,133	16	–	207	80	472	2,093	2,868	18,001	3,533,976	86,474	157,665	–
Somersetshire	–	117	576	2,981	3,674	4	–	69	–	–	843	916	4,590	640,508	2,215	1,096	–
Wales, South:																	
Breconshire (part of), Carmarthen, Glamorganshire (part of), Pembroke	–	1,127	3,857	37,800	42,784	33	–	520	55	720	7,136	8,464	51,248	9,983,341	114,694	176,610	–
Scotland, East:																	
Coal and Fireclay	–	396	3,733	25,192	29,321	4	1	298	51	606	5,120	6,080	35,401	11,419,619	110,923	–	–
Ironstone	–	41	496	3,348	3,885	1	–	25	2	80	680	788	4,673	–	–	803,665	–
Shale	–	19	160	870	1,049	–	–	11	–	–	180	191	1,240	–	–	–	377,108
Scotland, West:																	
Coal	–	344	1,970	15,193	17,507	4	–	201	28	47	3,209	3,489	20,996	7,177,888	–	–	–
Ironstone	–	85	732	6,496	7,313	2	–	81	10	57	1,491	1,641	8,954	–	–	1,642,002	–
Fireclay and Shale	–	2	30	319	351	–	–	–	–	–	47	47	398	–	200,337	–	46,314
Pyrites	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	604
Totals, Great Britain and Ireland	694	9,283	48,562	368,478	427,017	1,520	10	7,735	739	5,755	93,069	108,828	535,845	133,306,485	1,932,294	12,018,594	442,940

No. 2.—Summary of Mining Produce in Great Britain and Ireland in the Year 1875.

COAL.

Situation of Mines.	Tons.	Total Tons.
Anglesey		2,248
Breconshire (part of)		99,829
Do. grouped with Wales, South.		—
Carmarthen do.	—	527,846
Cheshire		688,865
Cumberland		1,171,341
Denbighshire		1,381,380
Derbyshire		7,190,921
Durham, North	6,115,685	25,568,349
Do. South	19,452,664	
Flintshire		965,490
Glamorganshire (part of)	555,997	9,928,994
Do. grouped with South Wales	9,372,997	
Gloucestershire (part of)		1,283,103
Ireland		128,201
Lancashire, North and East	8,881,137	17,930,051
Do. West	9,048,914	
Leicestershire		1,170,460
Monmouthshire		3,533,976
Northumberland		6,755,796
Nottinghamshire		3,265,368
Pembroke		82,498
Scotland, East: Clackmannan, Perth, Kinross, Sutherland	248,092	—
Edinburgh	695,696	—

FIRECLAY.

Situation of Mines.	Tons.	Total Tons.
Breconshire (part of)		4,393
Carmarthen		10,694
Cheshire		8,200
Cumberland		43,875
Denbighshire		29,978
Derbyshire		13,036
Durham, North	165,926	603,226
Do. South	437,300	
Flintshire		891
Glamorganshire, part of	7,518	111,518
Do. grouped with Wales, South	104,000	
Ireland		6,760
Lancashire, North and East	83,351	92,912
Do. West	9,561	
Leicestershire		29,585
Monmouthshire		86,474
Northumberland		102,433
Pembroke		—
Scotland, East: Clackmannan, Perth, Kinross, Sutherland	2,960	—
Edinburgh	12,868	—
Fife	8,495	—
Haddington	6,299	—
Lanark (part of)	70,600	—
Linlithgow	328	—
Stirling (part of)	9,373	—
	110,923	

IRONSTONE.

Situation of Mines.	Tons.	Total Tons.
Breconshire (part of)		64,164
Carmarthen		14,608
Cheshire	—	—
Cumberland		261
Denbighshire		19,151
Derbyshire		90,395
Durham	—	—
Flintshire	—	—
Glamorganshire (part of)	94	162,096
Do. grouped with Wales, South	162,002	
Gloucestershire		290
Ireland		300
Lancashire, North and East	—	—
Do. West		1,000
Leicestershire		161
Lincolnshire		118,770
Monmouthshire		157,665
Northumberland		12,008
Nottinghamshire		6,052
Pembroke	—	—
Scotland, East: Clackmannan, Perth, Kinross, Sutherland	14,264	—
Edinburgh	49,469	—
Fife	36,833	—
Haddington	9,899	—
Lanark (part of)	500,872	—
Linlithgow	188,772	—
Stirling (part of)	3,556	—
	803,665	—
Scotland, West: Ayrshire	853,868	—
Dumbarton	231,885	—
Lanark (part of)	246,534	—
Renfrew	170,106	—
Stirling (part of)	139,609	—
		2,445,667

COAL.

Situation of Mines.	Tons.	Total Tons.
Scotland, East—*cont.*		
Fife	1,587,428	—
Haddington	222,399	—
Lanark (part of)	7,495,629	—
Linlithgow	406,374	—
Stirling (part of)	764,001	—
	11,419,619	
Scotland, West: Ayrshire	3,565,336	—
Dumfries and Argyle	92,711	—
Dumbarton	182,659	—
Lanark	2,928,170	—
Renfrewshire	152,159	—
Stirling (part of)	256,853	—
	7,177,888	18,597,507
Shropshire		1,225,180
Somersetshire		640,508
Staffordshire, North		4,202,149
Do. South, and Worcestershire		10,300,000
Warwickshire		803,851
Westmoreland		2,566
Yorkshire	15,855,990	15,860,008
North Riding	4,018	
Total		133,306,485

FIRECLAY.

Situation of Mines.	Tons.	Total Tons.
Scotland, West: Ayrshire	86,743	—
Lanark (part of)	90,540	—
Renfrew	22,004	—
Stirling (part of)	1,050	—
		311,260
Shropshire		32,100
Somersetshire		2,215
Staffordshire, North		9,000
Do. South, and Worcestershire		230,935
Warwickshire		18,848
Yorkshire		183,961
Total		1,932,294

IRONSTONE.

Situation of Mines.	Tons.	Total Tons.
Shropshire		464,440
Somersetshire		1,096
Staffordshire, North		1,700,000
Do. South, and Worcestershire		384,055
Warwickshire		54,092
Yorkshire, Coal-field	236,782	—
Do. Cleveland	6,085,541	6,322,323
Total		12,018,594

SHALE, &c.

Cheshire			1,000
Derbyshire (pyrites)			84
Flintshire			2,352
Lancashire, North and East: Alum shale	3,995		4,118
Copperas Lumps	123		
Shropshire			2,000
Staffordshire, North			9,000
Do. South, and Worcestershire (pyrites)			360
Scotland, East: Edinburgh	245,196		—
Fife	2,195		—
Lanark (part of)	17,609		—
Linlithgow	106,343		—
Stirling (part of)	5,765		—
	377,108		
Scotland, West: Lanark (part of)	Pyrites. 313		—
Renfrew	484	46,001	—
Dumbarton	120	604	424,026
Total			442,940

No. 3.—Summary of Separate Fatal Accidents in and about the Coal, Fireclay, Ironstone, and Shale Mines of Great Britain and Ireland during the Year 1875.

Names of Districts.	Explosions of Fire Damp.	Falls in Mine.			In Shafts.									Miscellaneous Underground.									On Surface.				Gross Total.
		Falls of Side.	Falls of Roof.	Total Falls in Mine.	Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder, &c.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery Underground.	Sundries Underground.	Total Miscellaneous Underground.	By Machinery on Surface.	Boilers bursting.	Miscellaneous on Surface.	Total on Surface.	
Northumberland, Cumberland, and North Durham	3	2	22	24	–	–	–	1	–	2	1	1	5	3	1	–	–	7	12	–	6	29	2	–	9	11	72
South Durham and Westmoreland	1	–	35	35	–	1	5	–	1	1	–	2	10	3	–	–	–	1	10	2	1	17	2	–	11	13	76
Yorkshire N. Riding	–	10	2	12	–	–	1	–	–	–	1	1	3	–	–	–	–	–	9	–	3	12	–	–	1	1	28
North and East Lancashire	1	4	29	33	–	1	3	–	1	1	2	2	10	2	3	1	–	4	3	2	1	16	–	–	3	3	63
Ireland	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	3
West Lancashire and North Wales	4	16	42	58	1	–	2	2	–	5	5	5	20	–	1	–	–	1	8	1	–	11	2	–	16	18	111
Yorkshire	6	18	43	61	–	–	–	1	–	3	1	4	9	–	1	–	–	10	5	–	1	17	–	–	11	11	104
Do. (ironstone)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	1
Lincolnshire (ironstone)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Derby, Nottingham, Leicester, and Warwickshire	1	8	18	26	–	–	1	2	2	3	2	6	16	2	–	–	–	1	11	–	4	18	2	–	1	3	64
Do. (ironstone and fireclay)	–	–	1	1	–	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
North Stafford, Cheshire, and Shropshire	3	4	10	14	–	–	2	3	1	2	1	–	9	1	1	–	–	3	–	1	–	6	–	2	2	4	36
Do. (ironstone)	–	–	9	9	–	1	–	–	–	1	–	1	3	–	–	–	–	–	1	–	1	2	–	–	–	–	14
South Stafford and Worcestershire	6	20	15	35	–	–	6	–	1	1	–	3	11	2	2	–	–	–	4	–	3	11	4	–	2	6	69
Do. (ironstone and fireclay)	1	2	1	3	–	–	–	–	–	–	1	1	2	–	1	–	–	–	1	–	1	3	–	–	–	–	9
Monmouth, Gloucester, Somerset, and Devon	5	7	23	30	–	–	3	1	2	1	–	1	8	–	–	–	–	–	4	1	1	6	1	–	4	5	54
Do. (ironstone)	–	–	1	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	2	–	–	–	–	3
South Wales	4	13	28	41	–	1	3	3	4	5	5	–	21	2	1	1	–	4	15	–	4	27	1	–	9	10	103
Do. (ironstone, &c.)	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Scotland (East)	2	11	14	25	–	–	3	3	–	4	1	1	12	–	–	–	–	5	5	–	2	12	–	–	6	6	57
Do. (ironstone, &c.)	–	–	2	2	–	–	2	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	1	5
Scotland (West)	4	8	12	20	–	–	2	1	–	1	–	3	7	–	2	–	–	1	–	–	–	3	2	–	4	6	40
Do. (ironstone, &c.)	–	–	6	6	1	–	–	–	–	1	2	–	4	1	–	–	–	1	–	–	–	2	–	–	–	–	12
Total in 1875	41	123	316	439	2	4	33	18	12	31	22	31	153	18	13	3	–	38	88	7	29	196	16	3	79	98	927
Ditto in the preceding year	44	114	289	403	7	11	33	17	4	38	11	24	145	30	14	2	1	42	93	4	14	200	24	8	71	103	895

No. 3.—Summary of Deaths caused by the aforesaid Accidents in and about the Coal, Fireclay, Ironstone, and Shale Mines of Great Britain and Ireland during the Year 1875.

Names of Districts.	Explosions of Fire Damp.	Falls in Mine.			In Shafts.									Miscellaneous Underground.									On Surface.				Gross Total.
		Falls of Side.	Falls of Roof.	Total Falls in Mine.	Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder, &c.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery Underground.	Sundries Underground.	Total Miscellaneous Underground.	By Machinery on Surface.	Boilers bursting.	Miscellaneous on Surface.	Total on Surface.	
Northumberland, Cumberland, and North Durham	4	2	22	24	–	–	–	1	–	2	1	1	5	3	1	–	–	7	12	–	6	29	2	–	9	11	73
South Durham and Westmoreland	1	–	35	35	–	1	5	–	1	1	–	2	10	3	–	–	–	1	10	2	1	17	2	–	11	13	76
Yorkshire N. Riding	–	11	2	13	–	–	1	–	–	–	1	1	3	–	–	–	–	–	9	–	3	12	–	–	1	1	29
North and East Lancashire	2	4	34	38	–	1	4	–	1	1	2	2	11	3	4	4	–	4	3	2	1	21	–	–	3	3	75
Ireland	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	2	–	–	–	–	4
West Lancashire and North Wales	6	19	43	62	2	–	8	2	–	5	6	6	29	–	1	–	–	1	8	3	1	14	2	–	16	18	129
Yorkshire	162	18	44	62	–	–	–	1	–	3	1	6	11	–	1	–	–	10	5	–	1	17	–	–	11	11	263
Do (ironstone)	–	–	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–	–	–	–	–	4	–	–	–	–	4
Lincolnshire (ironstone)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Derby, Nottingham, Leicester, and Warwickshire	1	8	18	26	–	–	1	2	2	4	2	6	17	2	–	–	–	1	11	–	4	18	2	–	1	3	65
Do. (ironstone and fireclay)	–	–	1	1	–	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
North Stafford, Cheshire, and Shropshire	46	4	10	14	–	–	2	3	1	2	1	–	9	1	11	–	–	3	–	1	–	16	–	2	2	4	89
Do. (ironstone)	–	–	9	9	–	3	–	–	–	1	–	1	5	–	–	–	–	–	1	–	1	2	–	–	–	–	16
South Stafford and Worcestershire	6	20	16	36	–	–	7	–	1	1	–	3	12	2	6	–	–	–	4	–	3	15	4	–	2	6	75
Do. (ironstone and fireclay)	1	2	1	3	–	–	–	–	–	–	1	1	2	–	1	–	–	–	1	–	1	3	–	–	–	–	9
Monmouth, Gloucester, Somerset, and Devon	32	7	25	32	–	–	3	1	2	1	–	1	8	–	–	–	–	–	4	1	1	6	1	–	4	5	83
Do. (ironstone)	–	–	1	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	2	–	–	–	–	3
South Wales	20	13	32	45	–	1	3	3	5	5	5	–	22	2	1	2	–	4	15	–	4	28	1	–	10	11	126
Do. (ironstone)	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Scotland (East)	2	11	15	26	–	–	3	3	–	5	1	1	13	–	–	–	–	5	5	–	2	12	–	–	6	6	59
Do. (ironstone, &c.)	–	–	2	2	–	–	2	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	1	–	1	5
Scotland (West)	5	8	12	20	–	–	2	1	–	1	–	3	7	–	6	–	–	1	–	–	–	7	2	–	4	6	45
Do. (ironstone, &c.)	–	–	6	6	2	–	–	–	–	1	2	–	5	1	–	–	–	1	–	–	–	2	–	–	–	–	13
Total in 1875	288	127	331	458	4	6	41	18	13	33	23	34	172	22	32	8	–	38	88	9	30	227	16	3	80	99	1244
Ditto in the preceding year	166	114	299	413	7	11	35	17	4	45	11	24	154	31	18	2	1	45	94	4	19	214	24	12	73	109	1056

No. 4.—Summary showing the Proportion of Accidents and Lives Lost to the Number of Persons Employed in and about the Mines, and the Quantity of Minerals Wrought in Great Britain and Ireland during the Year 1875.

Names of Districts.	Persons Employed in and about the Mines.	Tons of Mineral Wrought.					Separate Fatal Accidents.	Lives Lost by the Accidents.	Persons Employed		Tons of Mineral Wrought		Number of Mines.
		Coal.	Fireclay.	Ironstone.	Shale, &c.	Total.			Per Fatal Accident.	Per Life Lost.	Per Fatal Accident.	Per Life Lost.	
Northumberland, Cumberland, and North Durham	50,070	14,042,822	312,234	12,269	—	14,367,325	72	73	695	686	199,546	196,812	216
South Durham and Westmoreland, and North Riding of Yorkshire	58,622	19,459,248	437,300	—	—	19,896,548	76	76	771	771	261,796	261,796	211
Yorkshire—Cleveland (ironstone)	9,761	—	—	6,085,541	—	6,085,541	28	29	348	337	217,341	209,884	46
North and East Lancashire	33,006	8,881,137	83,351	—	3,995 *123	8,968,606	63	75	524	440	142,358	119,581	373
Ireland	1,544	128,201	6,760	300	—	135,261	3	4	515	386	45,087	33,815	43
West Lancashire and North Wales	45,136	11,398,032	40,430	20,151	2,352	11,460,965	111	129	407	349	103,252	88,845	313
Yorkshire	62,190	15,855,990	183,961	236,782	—	16,276,733	105	267	595	234	155,016	60,962	520
Lincolnshire (ironstone)	269	—	—	118,770	—	118,770	—	—	—	—	—	—	10
Derbyshire, Leicestershire, Nottingham, and Warwickshire	52,477	12,430,600	61,469	150,700	*84	12,642,853	66	67	795	783	191,558	188,699	422
North Stafford, Cheshire, and Shropshire	30,056	6,116,194	49,300	2,164,440	12,000	8,341,934	50	105	601	286	166,838	78,494	250
South Staffordshire and Worcestershire	35,668	10,300,000	230,935	384,055	*360	10,915,350	78	84	457	424	139,940	129,944	573
Monmouth, Somerset, part of Glamorgan and Breconshire	34,136	6,113,413	100,600	223,309	—	6,437,322	57	86	598	397	112,935	74,852	408
South Wales	51,248	9,983,341	114,694	176,610	—	10,274,645	104	127	493	404	98,795	80,903	362
Scotland, East	41,314	11,419,619	110,923	803,665	377,108	12,711,315	62	64	666	645	205,021	198,614	379
Scotland, West	30,348	7,177,888	200,337	1,642,002	46,314 *604	9,067,145	52	58	584	523	174,368	156,330	375
Totals and Averages	535,845	133,306,485	1,932,294	12,018,594	442,940	147,700,313	927	1,244	578	430	159,331	118,730	4,501

* Pyrites or Copperas Lumps.

Metalliferous Mines Regulation Acts.

By the Act which was passed last year to amend the Metalliferous Mines Regulation Act of 1872, the annual returns have now to be sent in to the inspectors on or before the first day of February in every year, and, consequently, the following summaries contain not only the statistics for 1874, but also those for 1875.

The summaries are as follows:

No. 1. A summary by which it appears that in the aggregate in the year 1874, 56,361 persons were employed in and about the mines of Great Britain and Ireland under this Act, exclusive of those employed at the mines which are classed under the Coal Mines Regulation Act.

Of the total number of persons employed in Great Britain 32,352 were underground, and 21,062 above ground, and in Ireland 1,684 underground, and 1,263 above ground.

No. 2. A summary of the mining produce for 1874, given either in districts or counties. By this it appears that in the aggregate the following quantities of mineral were produced:—

	Tons.
Arsenic (crude and refined)	4,219
Barytes	13,022
Bluestone	1,008
Building stone	95,320
Cement	1,755
Copper ore	72,711
Copper precipitate	174½
Dross spar	25
Flagstone, &c.	quantity unknown
Fluor spar	609
Gold	391½ oz.
Gypsum	61,113
Iron ore	2,468,732
Iron pyrites	31,505
Lead ore (dressed)	69,545
Lignite	150
Limestone	394,947
Lithomarge (flux)	1,250
Manganese	5,456
Ochre and umber	3,896
Phosphate of lime	479
Pipe clay and potter's clay	47,772
Rock salt (exclusive of white salt from brine, which is estimated at one and a half million tons)	200,806
Silver ore	3⅓
Silver precipitate containing copper	1⅓
Slate (exclusive of Ireland)	151,989
Steatite	100
Tamping stone	120
Tin ore (*black tin*)	12,594
Tin ore sold in stone (*tin-stuff*), estimated to contain 568 tons of black tin	20,896
Tungstate of soda	22
Whinstone	1,351
Wolfram	33
Zinc ore	18,425

No. 3. A summary by which it appears that in the aggregate in the year 1875, 58,073 persons were employed in and about the mines of Great Britain and Ireland under this Act, exclusive of those employed at the mines which are classed under the Coal Mines Regulation Act.

Of the total number of persons employed in Great Britain 33,340 were underground, and 22,107 above ground, and in Ireland 1,565 underground, and 1,061 above ground.

No. 4. A summary of the mining produce for 1875, given either in districts or counties.

By this it appears that in the aggregate the following quantities of mineral were produced:

	Statute Tons.
Arsenic (crude and refined)	3,783
Arsenical pyrites	12,948
Auriferous pyrites	10
Barytes	15,845
Black Marble	20
Bluestone	650
Building stone	144,714
Calc spar	1,237
Chert	3,960
Copper ore	66,214
Copper precipitate	211
Dross	34
Fire-sand	272
Flagstone	48,000
Fluor spar	324
Gannister	750
Gold	8 oz.
Gold quartz	122
Gypsum	65,068
Iron ore	2,673,899
Iron pyrites	18,115
Jet	1
Lead ore (dressed)	70,613
Lead ore (undressed)	3,886
Lignite	20
Limestone	499,027
Lithomarge	3,373
Manganese	3,725
Ochre and umber	5,045
Phosphate of lime	122
Pipe clay and potter's clay	46,686
Rock salt (exclusive of the white salt made from brine, amounting to 1,779,000 tons)	191,119
Silver precipitate containing copper	1½
Slate and slabs dressed (exclusive of school slates)	153,282
Steatite	151
Tamping stone	180
Tin ore (*black tin*)	11,815
Tin ore sold in stone (*tin-stuff*), estimated to contain 796 tons of black tin	25,205
Whinstone	11,462
Wolfram	45
Zinc ore	22,342

No. 5. A summary of fatal accidents and lives lost in and about the mines, showing that in the year 1875, at the mines classed under the Metalliferous Mines Regulation Act in Great Britain and Ireland, the fatal accidents amounted to 110 and the deaths (some of the accidents causing more than one death) to 119. Of these, 100 deaths occurred underground and 19 above ground.

The summary of fatal accidents and deaths in 1874 was given in last year's Report. From this and the summaries just given it appears that in the year 1874, in the Mines classed under the Metalliferous Mines Regulation Act, there was one fatal accident amongst every 599 persons employed in and about the mines, and one death by accident amongst every 547 persons employed; and in 1875, one fatal accident amongst every 527 persons, and one death by accident amongst every 488 persons employed in and about the mines.

It must be remarked that in consequence of the decision of the Court of Queen's Bench the slate mines of North Wales are now included under the Act. Furthermore, the quantities of mineral produced in 1875 are stated in statute weight in accordance with the amending Act; the tons used in the 1874 statistics are those usually employed for the respective minerals in commerce. The 1875 statistics do not include undressed mineral which has been stocked and not sold, treated, or used.

No. 1.—Summary of Persons Employed in and about the Metalliferous Mines of Great Britain and Ireland in the Year 1874.

Situation of Mines.	Inspector's District.	Underground.				Aboveground.							Total underground and aboveground.
		Male Persons.				Ages 8 to 13.		Ages 13 to 18.		Ages above 18.		Total.	
		Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.		
Northumberland, Cumberland, Westmoreland, Durham, Derbyshire, Shropshire, Isle of Man, North Wales, and parts of South Wales, Lancashire, and Yorkshire	T. F. Evans	20	313	13,861	14,194	410	15	1,690	186	260	4,969	7,530	21,724
Yorkshire (North and West Ridings)	Thomas Bell	7	30	355	392	11	—	17	1	2	94	125	517
Cheshire, and Lancashire within the Coalfield	J. Dickinson	6	29	393	428	4	1	2	—	10	108	125	553
Derbyshire and Nottinghamshire (Midland District)	Thomas Evans	2	10	132	144	2	—	8	—	—	69	79	223
Staffordshire and part of Shropshire	Thomas Wynne	—	—	62	62	4	—	4	—	—	15	23	85
South Staffordshire and Worcestershire	James P. Baker	—	61	837	898	—	—	4	—	—	140	144	1,042
Breconshire, Gloucestershire, Herefordshire, Monmouthshire, and parts of Somersetshire, Glamorganshire, and Wiltshire	L. Brough	26	154	1,388	1,568	14	—	47	—	—	426	487	2,055
Glamorganshire, Pembrokeshire, and Carmarthenshire	Thos. E. Wales	1	23	456	480	15	—	16	1	25	108	165	645
Cornwall, Devonshire, Dorsetshire, and part of Somersetshire	C. Le Neve Foster	67	1,187	12,062	13,316	981	331	2,161	1,173	1,934	5,396	11,976	25,292
East Scotland	R. Moore	2	27	513	542	5	—	29	—	6	164	204	746
West Scotland	W. Alexander	—	14	314	328	2	—	56	3	8	135	204	532
Ireland	J. Dickinson	6	91	1,587	1,684	30	7	207	103	70	846	1,263	2,947
Total number of persons employed		137	1,939	31,960	34,036	1,478	354	4,241	1,467	2,315	12,470	22,325	56,361

No. 2.—Summary of Mining Produce of Great Britain and Ireland in the Year 1874.

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Arsenic (crude and refined)	Cornwall and Devonshire	C. Le Neve Foster	4,219
Barytes	Cumberland, Derbyshire, Durham, Montgomeryshire, Northumberland, Shropshire.	T. F. Evans	11,516
Ditto	Ireland	J. Dickinson	1,506
		Total Barytes	13,022
Bluestone	Anglesey	T. F. Evans	1,008
Building Stone (Freestone)	Devonshire	C. Le Neve Foster	101
Ditto	Somersetshire and Wiltshire	Lionel Brough	95,219
			95,320
Cement	Lanarkshire	Ralph Moore	1,755
Copper Ore	Anglesey, Cardiganshire, Carnarvonshire, Cumberland, Lancashire, Merionethshire, Montgomeryshire, Yorkshire, and the Isle of Man.	T. F. Evans	6,218
Ditto	Cheshire	J. Dickinson	8,184
Ditto	Cornwall and Devonshire	C. Le Neve Foster	50,750
Ditto	Ireland	J. Dickinson	7,559
		Total Copper Ore	72,711
Copper Precipitate	Cheshire	J. Dickinson	126
Ditto	Ireland	J. Dickinson	48½
		Total Copper Precipitate	174½
Dross Spar	Shropshire	T. F. Evans	25
Flagstone, Slate, &c.	Ireland and Lancashire	J. Dickinson	Quantity Unknown.
Fluor Spar	Devonshire	C. Le Neve Foster	609
Gold	Ireland	J. Dickinson	6½ oz.
Ditto	Merionethshire	T. F. Evans	385 „
			391½ „
Gypsum	Derbyshire and Nottinghamshire (Midland District).	Thomas Evans	61,113

Summary of Mining Produce of Great Britain and Ireland in the Year 1874—*continued.*

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Iron Ore	Ayrshire	W. Alexander	4,678
Ditto	Cornwall, Devonshire, and part of Somersetshire.	C. Le Neve Foster	96,553
Ditto	Cumberland, Durham, Flintshire, Lancashire, Westmoreland, and the Isle of Man.	T. F. Evans	1,943,575
Ditto	Forest of Dean, Gloucestershire, and Somersetshire.	Lionel Brough	149,114
Ditto	Glamorganshire	Thomas E. Wales	123,889
Ditto	Haddington and Shetland	Ralph Moore	11,077
Ditto	Ireland	J. Dickinson	139,846
		Total Iron Ore	2,468,732
Iron Pyrites	Anglesey, Carnarvonshire, and Merionethshire.	T. F. Evans	2,470
Ditto (including Arsenical Pyrites).	Cornwall and Devonshire	C. Le Neve Foster	2,829
Ditto	Ireland	J. Dickinson	25,941
Ditto	Renfrewshire	W. Alexander	265
		Total Iron Pyrites	31,505
Lead Ore (Dressed)	Breconshire, Cardiganshire, Carnarvonshire, Cumberland, Denbighshire, Derbyshire, Durham, Flintshire, Merionethshire, Montgomeryshire, Northumberland, Radnorshire, Shropshire, Westmoreland, Yorkshire, and the Isle of Man.	T. F. Evans	57,898
Ditto	Cornwall and Devonshire	C. Le Neve Foster	3,610
Ditto	Dumfries and Kirkcudbright	W. Alexander	1,596
Ditto	Glamorganshire	Thomas E. Wales	568
Ditto	Ireland	J. Dickinson	1,750
Ditto	Lanarkshire	Ralph Moore	820
Ditto	Somersetshire	Lionel Brough	403
Ditto	Yorkshire (North and West Ridings).	Thomas Bell	2,900
		Total Lead Ore	69,545
Lignite	Ireland	J. Dickinson	150
Limestone	Edinburghshire, Fifeshire, and Lanarkshire.	Ralph Moore	121,944
Ditto (Hydraulic)	Lancashire	J. Dickinson	4,491
Ditto	Shropshire	T. Wynne	7,282
Ditto	South Staffordshire and Worcestershire.	J. P. Baker	183,753
Ditto	West of Scotland	W. Alexander	77,477
		Total Limestone	394,947
Lithomarge (Flux)	Ireland	J. Dickinson	1,250
Manganese	Cardiganshire	T. F. Evans	40
Ditto	Cornwall and Devonshire	C. Le Neve Foster	5,416
			5,456

Summary of Mining Produce of Great Britain and Ireland in the Year 1874—*continued.*

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Ochre and Umber	Anglesey and Cardiganshire	T. F. Evans	3,012
Ditto	Cornwall and Devonshire	C. Le Neve Foster	722
Ditto	Carmarthenshire	Thomas E. Wales	162
		Total Ochre and Umber	3,896
Phosphate of Lime	Montgomeryshire	T. F. Evans	479
Pipe Clay and Potter's Clay	Devonshire and Dorsetshire	C. Le Neve Foster	47,772
Rock Salt	Cheshire	J. Dickinson	172,855
Ditto	Ireland	Ditto	27,951
		Total Rock Salt	200,806*
Silver Precipitate containing Copper	Cornwall	C. Le Neve Foster	1⅓
Silver Ore	Cornwall	C. Le Neve Foster	3⅓
Slate	Carnarvonshire and Merionethshire	T. F. Evans	151,743
Ditto	Ireland	J. Dickinson	unknown.
Ditto	Perthshire	Ralph Moore	246
		Total slate (exclusive of Ireland).	151,989
Steatite	Ireland	J. Dickinson	100
Tamping Stone	Cornwall	C. Le Neve Foster	120
Tin Ore (*Black Tin*)	Cornwall	C. Le Neve Foster	12,594
Tin Ore sold in stone (*Tin-stuff*)	Cornwall	C. Le Neve Foster	20,896†
Tungstate of Soda	Cornwall	C. Le Neve Foster	22
Whinstone	Northumberland	T. F. Evans	1,351
Wolfram	Cornwall	C. Le Neve Foster	33
Zinc Ore	Breconshire, Cardiganshire, Carnarvonshire, Cumberland, Denbighshire, Flintshire, Montgomeryshire, Radnorshire, Shropshire, and the Isle of Man.	T. F. Evans	17,622
Ditto	Cornwall	C. Le Neve Foster	693
Ditto	Ireland	J. Dickinson	1
Ditto	West of Scotland	W. Alexander	109
		Total Zinc Ore	18,425

* Irrespective of the White Salt made from brine in Cheshire, Staffordshire, and Worcestershire, amounting to about one and a half million tons annually.

† Estimated to contain 568 tons of Black Tin.

No. 3.—Summary of Persons Employed in and about the Metalliferous Mines of Great Britain and Ireland in the Year 1875.

Situation of Mines.	Inspector's District.	Underground.				Aboveground.							Total underground and aboveground.
		Male persons.				Ages 8 to 13.		Ages 13 to 18.		Ages above 18.		Total.	
		Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.		
Northumberland, Cumberland, and detached part of Lancashire	James Willis	21	211	6,794	7,026	88	—	554	—	4	2,596	3,242	10,268
Durham, Westmoreland, and North Riding of Yorkshire	Thomas Bell	14	75	2,518	2,607	68	—	524	1	23	689	1,305	3,912
East and West Ridings of Yorkshire	F. N. Wardell	—	3	188	191	—	—	14	—	—	47	61	252
Cheshire, Lancashire within the Coalfield, and Sussex	J. Dickinson	9	35	421	465	4	—	13	—	7	154	178	643
Derbyshire and Nottinghamshire	Thomas Evans	1	7	174	182	3	—	11	—	—	106	120	302
Anglesey, Brecknockshire, Cardiganshire, Carmarthenshire, Denbighshire, Derbyshire, Flintshire, Merionethshire, Mongomeryshire, Radnorshire, Shropshire, Isle of Man	T. F. Evans	7	83	7,230	7,320	146	18	1,009	179	250	4,038	5,640	12,960
South Staffordshire and Worcestershire.	J. P. Baker	—	20	397	417	—	—	7	—	—	101	108	525
Gloucestershire, Herefordshire, Monmouthshire, and parts of Glamorganshire, Somersetshire, and Wiltshire	L. Brough	26	185	1,339	1,550	1	3	55	—	1	250	310	1,860
Glamorganshire, Pembrokeshire, and Carmarthenshire	Thos. E. Wales	1	21	386	408	6	—	26	5	18	109	164	572
Cornwall, Devonshire, Dorsetshire, and part of Somersetshire	C. Le Neve Foster	47	965	10,956	11,968	829	282	1,916	1,076	1,751	4,698	10,552	22,520
East Scotland	R. Moore	2	29	569	600	1	—	25	—	7	171	204	804
West Scotland	W. Alexander	—	23	583	606	3	—	53	—	3	164	223	829
Ireland	J. Dickinson	2	73	1,490	1,565	30	3	172	96	76	684	1,061	2,626
Total number of persons employed		130	1,730	33,045	34,905	1,179	306	4,379	1,357	2,140	13,807	23,168	58,073

No. 4.—Summary of Mining Produce of Great Britain and Ireland in the Year 1875.

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Arsenic (crude and refined) -	Cornwall and Devonshire -	C. Le Neve Foster -	3,783
Arsenical Pyrites - -	Cornwall and Devonshire -	C. Le Neve Foster -	12,948
Auriferous Pyrites - -	Merionethshire -	T. F. Evans - -	10
Barytes - - -	Cumberland and Northumberland	J. Willis - -	5,220
Ditto - - -	Derbyshire, Flintshire, Montgomeryshire, and Shropshire -	T. F. Evans - -	5,796
Ditto - - -	Derbyshire and Nottinghamshire-	Thomas Evans - -	1,123
Ditto - - -	Ireland - - -	J. Dickinson - -	3,656
Ditto - - -	Somersetshire - - -	L. Brough - -	50
		Total Barytes -	15,845
Black Marble - - -	Derbyshire - - -	Thomas Evans - -	20
Bluestone - - -	Anglesey - - -	T. F. Evans - -	650
Building Stone - -	Renfrewshire - -	W. Alexander - -	68,000
Ditto - - -	Somersetshire and Wiltshire -	L. Brough - -	76,667
Ditto - - -	Westmoreland - - -	Thomas Bell - -	47
		Total Building Stone -	144,714
Calc Spar - - -	Derbyshire - - -	Thomas Evans - -	1,237
Chert - - -	Derbyshire - - -	T. F. Evans - -	3,710
Ditto - - -	Derbyshire and Nottinghamshire-	Thomas Evans - -	250
		Total -	3,960
Copper Ore - -	Anglesey, Cardiganshire, Carnarvonshire, Merionethshire, and Montgomeryshire.	T. F. Evans - -	4,239
Ditto - - -	Cornwall and Devonshire -	C. Le Neve Foster -	53,529
Ditto - - -	Cumberland and detached part of Lancashire.	J. Willis - -	1,502
Ditto - - -	Ireland - - -	J. Dickinson - -	5,015*
Ditto - - -	Yorkshire, North Riding -	T. Bell - - -	16
Ditto - - -	East Scotland - - -	R. Moore - -	1,913
		Total Copper Ore -	66,214
Copper Precipitate - -	Cheshire - - -	J. Dickinson - -	122
Ditto (containing silver)	Cornwall - -	C. Le Neve Foster -	41
Ditto - - -	Ireland - - -	J. Dickinson - -	48
		Total Copper Precipitate	211

* Exclusive of 693 tons dressed in the beginning of 1875, but included in the return for 1874.

Summary of Mining Produce of Great Britain and Ireland in the Year 1875—*continued.*

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Dross	Shropshire	T. F. Evans	34
Fire Sand	Carnarvonshire	T. F. Evans	272
Flagstone, &c.	Lancashire	J. Dickinson	48,000
Fluor Spar	Devonshire	C. Le Neve Foster	324
Gannister	Lanarkshire	W. Alexander	750
Gold	Ireland	J. Dickinson	8 oz.
Gold Quartz	Merionethshire	T. F. Evans	122
Gypsum	Derbyshire and Nottinghamshire	T. Evans	65,068
Iron Ore	Ayrshire	W. Alexander	4,089
Ditto	Cornwall, Devonshire, and part of Somersetshire.	C. Le Neve Foster	60,955
Ditto	Cumberland and detached part of Lancashire.	J. Willis	2,242,328
Ditto	Denbighshire and Flintshire	T. F. Evans	2,267
Ditto	Durham and Westmoreland	T. Bell	21,312
Ditto	Forest of Dean, Glamorganshire, Gloucestershire, and part of Somersetshire.	L. Brough	124,047
Ditto	Part of Glamorganshire	T. E. Wales	102,533
Ditto	Haddingtonshire and Shetland	R. Moore	6,568
Ditto	Ireland	J. Dickinson	109,800
		Total Iron Ore	2,673,899
Iron Pyrites	Anglesey, Carnarvonshire, and Merionethshire.	T. F. Evans	1,860
Ditto	Cornwall and Devonshire	C. Le Neve Foster	424
Ditto	Ireland	J. Dickinson	15,831
		Total Iron Pyrites	18,115
Jet	Yorkshire	T. Bell	Estimated 1 ton.
Lead Ore (dressed)	Brecknockshire, Cardiganshire, Carnarvonshire, Denbighshire, Derbyshire, Flintshire, Merionethshire, Montgomeryshire, Radnorshire, Shropshire, Isle of Man.	T. F. Evans	34,617
Ditto	Cornwall and Devonshire	C. Le Neve Foster	2,883
Ditto	Cumberland and Northumberland	J. Willis	6,422
Ditto	Durham, Northumberland, North Riding of Yorkshire and Westmoreland.	T. Bell	19,335
Ditto	Ireland	J. Dickinson	1,855
Ditto	Lanarkshire	R. Moore	2,346
Ditto	Pembrokeshire and Carmarthenshire.	T. E. Wales	583
Ditto	Somersetshire	L. Brough	546
Ditto	West Scotland	W. Alexander	1,501
Ditto	Yorkshire, West Riding	F. N. Wardell	525
		Total Lead Ore	70,613

Summary of Mining Produce of Great Britain and Ireland in the Year 1875—*continued.*

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Lead Ore (undressed)	Durham and Northumberland	T. Bell	3,886
Lignite	Ireland	J. Dickinson	20
Limestone	Ayrshire, Dumbarton, Lanarkshire, Renfrewshire, Stirling.	W. Alexander	92,653
Ditto	Denbighshire, Derbyshire, and Shropshire.	T. F. Evans	12,500
Ditto	Lanarkshire	R. Moore	165,262
Ditto	Lancashire (hydraulic limestone)	J. Dickinson	3,884
Ditto	South Staffordshire and Worcestershire.	J. P. Baker	224,728
		Total Limestone	499,027
Lithomarge (Flux)	Ireland	J. Dickinson	3,373
Manganese	Cornwall and Devonshire	C. Le Neve Foster	3,725
Ochre and Umber	Anglesey	T. F. Evans	3,955
Ditto	Cornwall and Devonshire	C. Le Neve Foster	926
Ditto	Glamorganshire	T. E. Wales	159
Ditto	Ireland	J. Dickinson	5
		Total Ochre and Umber	5,045
Phosphate of Lime	Montgomeryshire	T. F. Evans	122
Pipe Clay and Potter's Clay	Devonshire and Dorsetshire	C. Le Neve Foster	46,686
Rock Salt	Cheshire	J. Dickinson	158,044
Ditto	Ireland	J. Dickinson	33,075
		Total Rock Salt	191,119*
Silver Precipitate containing Copper	Cornwall	C. Le Neve Foster	1½
Slate and Slabs (Dressed)	Carnarvonshire, Denbighshire, and Merionethshire.	T. F. Evans	149,565
Ditto	Ireland (School slates)	J. Dickinson	Not known
Ditto	„ (slabs)	„	794
Ditto	Perthshire	R. Moore	300
Ditto	Westmoreland	T. Bell	2,623
		Total Slate and Slabs, exclusive of School Slates	153,282
Steatite	Ireland	J. Dickinson	151
Tamping Stone	Cornwall	C. Le Neve Foster	180

* Irrespective of the White Salt made from brine in Cheshire, Staffordshire, and Worcestershire, amounting to 1,779,000 tons.

Summary of Mining Produce of Great Britain and Ireland in the Year 1875—*continued.*

Kind of Mining Produce.	Situation of Mines.	Inspector's District.	Tons.
Tin Ore (*Black Tin*) -	Cornwall and Devonshire - -	C. Le Neve Foster -	11,815
Tin Ore sold in stone (*Tin-stuff.*)	Cornwall - - -	C. Le Neve Foster -	25,205*
Whinstone - - -	Northumberland - - -	J. Willis - - -	1,729
Ditto - - -	Durham and Yorkshire - -	T. Bell - - -	9,733
		Total Whinstone -	11,462
Wolfram - - -	Cornwall - - - -	C. Le Neve Foster -	45
Zinc Ore - - -	Cardiganshire, Carnarvonshire, Denbighshire, Flintshire, Montgomeryshire, Radnorshire, Shropshire, and the Isle of Man.	T. F. Evans - -	17,816
Ditto - - -	Cornwall - - -	C. Le Neve Foster -	2,988
Ditto - - -	Cumberland - - -	J. Willis - - -	1,443
Ditto - - -	Kirkcudbright - - -	W. Alexander - -	65
Ditto - - -	Northumberland - - -	T. Bell - - -	30
		Total Zinc Ore -	22,342

* Estimated to contain 796 tons of Black Tin.

No. 5.—Summary of Separate Fatal Accidents in and about the Metalliferous Mines of Great Britain and Ireland during the Year 1875.

Names of Districts.	Explosions of Fire Damp.	Falls of Ground.	In Shafts.									Miscellaneous Underground.								On Surface.				Gross Total.
			Overwinding.	Ropes and Chains Breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder, &c.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery Underground.	Sundries Underground.	Total { Miscellaneous Underground.	By Machinery on Surface.	Boilers bursting.	Miscellaneous on Surface.	Total on Surface.	
Northumberland, Cumberland, and detached part of Lancashire	–	8	–	1	–	–	–	2	1	3	7	2	1	–	–	–	–	–	–	3	–	–	–	–	18
Durham, Westmoreland, and North Riding of Yorkshire	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
East and West Ridings of Yorkshire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cheshire, Lancashire within the Coalfield, and Sussex	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Derbyshire and Nottinghamshire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Anglesey, Brecknockshire, Cardiganshire, Carmarthenshire, Denbighshire, Derbyshire, Flintshire, Merionethshire, Montgomeryshire, Radnorshire, Shropshire, Isle of Man	–	6	–	1	–	–	–	3	1	–	5	4	–	–	–	–	–	1	6	11	4	–	1	5	27
South Staffordshire and Worcestershire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1
Gloucestershire, Herefordshire, Monmouthshire, and parts of Glamorganshire, Somersetshire, and Wiltshire	–	2	–	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	1	2	–	–	2	2	7
Glamorganshire, Pembrokeshire, and Carmarthenshire	–	2	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	3
Cornwall, Devonshire, Dorsetshire, and part of Somersetshire	–	7	–	–	–	–	1	10	4	1	16	4	1	1	–	–	–	–	7	13	4	–	4	8	44
Eastern District of Scotland	–	1	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Western do.	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Ireland	–	2	–	1	–	–	–	–	–	1	2	–	–	–	–	–	–	–	–	–	1	–	1	2	6
Total Separate Fatal Accidents in 1875 (including the Slate Mines)	–	30	–	3	–	–	1	18	6	5	33	11	2	1	–	–	–	1	15	30	9	–	8	17	110
Ditto in the preceding year (exclusive of some of the Slate Mines)	–	36	1	–	8	1	1	14	2	5	32	5	2	–	–	–	–	2	4	13	7	1	5	13	94

No. 5.—Summary of Deaths from the aforesaid Accidents in and about the Metalliferous Mines of Great Britain and Ireland during the Year 1875.

Names of Districts.	Explosions of Fire Damp.	Falls of Ground.	In Shafts.								Miscellaneous Underground.									On Surface.				Gross Total.
			Overwinding.	Ropes and Chains Breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder, &c.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery Underground.	Sundries Underground.	Total Miscellaneous Underground.	By Machinery on Surface.	Boilers bursting.	Miscellaneous on Surface.	Total on Surface.	
Northumberland, Cumberland, and detached part of Lancashire	–	8	–	2	–	–	–	2	1	3	8	2	1	–	–	–	–	–	–	3	–	–	–	–	19
Durham, Westmoreland, and North Riding of Yorkshire	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
East and West Ridings of Yorkshire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cheshire, Lancashire within the Coalfield, and Sussex	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Derbyshire and Nottinghamshire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Anglesey, Brecknockshire, Cardiganshire, Carmarthenshire, Denbighshire, Derbyshire, Flintshire, Merionethshire, Montgomeryshire, Radnorshire, Shropshire, Isle of Man	–	8	–	2	–	–	–	3	1	–	6	5	–	–	–	–	–	1	6	12	4	–	3	7	33
South Staffordshire and Worcestershire	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1
Gloucestershire, Herefordshire, Monmouthshire, and parts of Glamorganshire, Somersetshire, and Wiltshire	–	2	–	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	1	2	–	–	2	2	7
Glamorganshire, Pembrokeshire, and Carmarthenshire	–	2	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	3
Cornwall, Devonshire, Dorsetshire, and part of Somersetshire	–	7	–	–	–	–	1	10	4	1	16	4	1	3	–	–	–	–	7	15	4	–	4	8	46
Eastern District of Scotland	–	1	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Western do.	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Ireland	–	2	–	1	–	–	–	–	–	1	2	–	–	–	–	–	–	–	–	–	1	–	1	2	6
Total Lives lost in 1875 (including the Slate Mines)	–	32	–	5	–	–	1	18	6	5	35	12	2	3	–	–	–	1	15	33	9	–	10	19	119
Ditto in the preceding year (exclusive of some of the Slate Mines)	–	40	1	–	10	1	1	14	2	5	34	6	3	–	–	–	–	2	4	15	7	1	6	14	103

Mr. Bell's Report.

REPORT on the INSPECTION of MINES (both COAL and METALLIFEROUS) in the DURHAM DISTRICT, comprising the southern part of the county of DURHAM, the county of WESTMORELAND, and the North Riding of the county of YORK, from the 1st day of January to the 31st day of December 1875, inclusive.—By THOS. BELL, Esq.

SIR, Durham, 31st March 1876.

As Inspector of Mines for the above district, I have the honour to lay before you, as required by section 48 of "The Coal Mines Regulation Act," and section 20 of "The Metalliferous Mines Regulation Act, 1872," my Annual Report for the year ending 31st December 1875, with a schedule of accidents that have occurred during that period, and a list of collieries and other mines which now comprise the Durham District.

In compliance with your request contained in a letter of the 9th June last, in which you state, "With reference to the resolution agreed to at the meeting of the Inspectors of Mines "in February last, respecting the proposed re-arrangement of the northern portion of the "district belonging to Mr. T. F. Evans, Inspector of Metalliferous Mines, that the metal- "liferous mines in the Dales District of the north riding of York, and the east of West- "moreland were assigned to the Durham District in December 1874, and that you have now "no objection to the following further re-arrangement, which would appear to be most "convenient," viz.: "The metalliferous mines in Northumberland and Cumberland should "be in future inspected by Mr. Willis, and those in Durham should be inspected by you," I met my colleagues Messrs. Willis, Wardell, and Evans, when we arranged the boundary lines between districts; the line between Mr. Willis and myself as regards the coal mines in Durham, although difficult to describe, is well known to us, also to the coalowners, remains unaltered, and as the metalliferous mines are remote from this line there is no difficulty in adopting it to both classes of mines.

The mines in the east part of the county of Westmoreland (both coal and metalliferous) having already been assigned to this district, and seeing there was only a small number of mines on the west side, it was thought most convenient to place them under my inspection, and the county boundary line would be the best in this case.

In the Dales District of Yorkshire, the boundary line of the north riding was considered to be the most convenient line of division between Mr. Wardell's district and my own, and this was adopted as it covers the whole of the Cleveland ironstone and the Whitby jet mines, which have belonged to this district since the coming into operation of the Coal Mines Regulation Act, 1872.

The Durham District now comprises the whole of the coal and metalliferous mines in the county of Durham, south and west of the original boundary line, commencing at Sunderland near the sea on the east, and continuing by a circuitous route to Ebchester on the west, the whole of the coal and metalliferous mines in the county of Westmoreland, and the whole of the coal, ironstone, and metalliferous mines in the north riding of the county of York.

The returns of the number of persons employed in and about the mines under "The Coal Mines Regulation Act, 1872," and of the quantity of mineral raised in statute tons were sent in on the 1st of February as usual.

Under section 10 of the Metalliferous Mines Regulation Act, 1872, the returns of persons employed in and about the mines, and of the mineral raised at those mines, were only required to be sent in on the 1st of August in every year, therefore, the returns accompanying the Inspectors Reports for the year were incomplete; however, a short Act was passed in July of last year repealing section 10 of the Act of 1872, and enacting that, "The owner or agent "of every mine to which the Metalliferous Mines Regulation Act, 1872, applies, shall on or "before the 1st day of February in every year send to the inspector of the district on behalf "of a Secretary of State, a correct return specifying with respect to such mine, for the year "ending on the preceding 31st of December, the quantity in statute weight of the mineral "dressed, and of the undressed mineral which has been sold, treated, or used during that "year, and the number of persons ordinarily employed in or about such mine," &c., these returns have also been sent in, and I am now enabled to give a correct summary of them for the past year.

The returns which have been forwarded to me, in accordance with section 38 of "The Coal Mines Regulation Act," show the following figures :—

	South Durham.	Westmoreland.	North Riding and Cleveland.	Totals.
Minerals wrought in 1875:	Tons.	Tons.	Tons.	Tons.
Coal	19,452,664	2,566	4,018	19,459,248
Fire-clay	437,300	—	—	437,300
Ironstone	—	—	6,085,541	6,085,541
Totals	19,889,964	2,566	6,089,559	25,982,089
Persons employed in 1875:				
Underground:				
Boys of 10 and under 12 years of age	2	—	—	2
„ 12 „ 13 „	1,363	—	67	1,430
Males of 13 and under 16 „	5,418	2	463	5,883
„ above 16 years of age	40,067	16	7,130	47,213
Total underground	46,850	18	7,660	54,528
Above ground:				
Boys of 10 and under 13 years of age	461	—	23	484
Girls 10 „ 13 „	3	—	1	4
Males of 13 „ 16 „	1,332	—	177	1,509
Females 13 „ 16 „	—	—	—	—
Women above 16 years of age	4	—	—	4
Males „ „	9,926	1	1,927	11,854
Total above ground	11,726	1	2,128	13,855
Total number of persons employed in and about the mines	58,576	19	9,788	68,383

The following tables show comparisons between the years 1874 and 1875 as regards the number of persons employed in and about the mines, quantity of mineral raised, and other particulars.

Table No. 1 shows the comparison for South Durham and Westmoreland, as a portion of the district (which naturally divides itself).

Table No. 2 shows the comparison for the north riding and Cleveland (Ironstone) portion of the district.

Table No. 3 shows the comparison for the district in its entirety.

Table No. 4 shows the comparison for the district, in divisions, as a whole, and the figures placed in juxtaposition with those appertaining to the whole kingdom.

Table No. 1.

	1874.	1875.
Number of persons employed	55,696	58,595
Quantity of mineral raised in statute tons	18,416,131	19,892,530
Separate fatal accidents	74	76
Lives lost by the accidents	76	76
Persons employed per separate fatal accident	752	771
Persons employed per life lost	733	771
Tons of mineral raised per separate fatal accident	248,866	261,744
Tons of mineral raised per life lost	242,317	261,744

And similar comparisons as regards the north riding and Cleveland Ironstone portion of the district stand thus:

Table No. 2.

	1874.	1875.
Number of persons employed	9,845	9,788
Quantity of mineral raised in statute tons	5,428,497	6,089,559
Separate fatal accidents	20	28
Lives lost by the accidents	20	29
Persons employed per separate fatal accident	492	349
Persons employed per life lost	492	337
Tons of mineral raised per separate fatal accident	271,425	217,484
Tons of mineral raised per life lost	271,425	209,985

Again, taking the district in its entirety for the years 1874 and 1875, the figures show :—

Table No. 3.

	1874.	1875.
Number of persons employed	65,541	68,383
Quantity of mineral raised in statute tons	23,844,628	25,982,089
Separate fatal accidents	94	104
Lives lost by the accidents	96	105
Persons employed per separate fatal accident	697	657
Persons employed per life lost	682	651
Tons of mineral raised per separate fatal accident	253,655	249,827
Tons of mineral raised per life lost	248,381	247,448

To render the comparisons more complete and useful, the three sets of figures given above are placed in juxtaposition with similar figures appertaining to the whole kingdom, thus :—

Table No. 4.

	South Durham and Westmoreland separately, as a Portion of the District.	North Riding of Yorkshire separately, as a Portion of the District.	In the whole District.	In the whole Kingdom.
Number of persons employed	58,595	9,788	68,383	535,845
Quantity of mineral raised	19,892,530	6,089,559	25,982,089	147,700,313
Separate fatal accidents	76	28	104	927
Lives lost by the accidents	76	29	105	1,244
Persons employed per separate fatal accident	771	349	657	578
Persons employed per life lost	771	337	651	430
Tons of mineral raised per separate fatal accident	261,744	217,484	249,827	159,331
Tons of mineral raised per life lost	261,744	209,985	247,448	118,730

The foregoing figures are sufficiently explanatory in themselves to show that this district again stands in a good position as compared with other mining districts of the kingdom as regards the death rate.

The following tables give summaries of the returns that have been made, under section 1 of "The Metalliferous Mines Regulation Amendment Act, 1875," on the 1st day of February for the mines now comprised in the "Durham District," but without giving particulars as to the different counties. No comparison can be made with previous returns, this being the first year in which the district has been divided under the new arrangement.

Minerals produced in 1875 :—	Tons.
Lead ore, dressed	19,335
Lead ore, sold, undressed	3,886
Copper ore	16
Zinc ore	30
Iron ore	21,312
Slate	2,623
Building stone	47
Whinstone, for road metal	9,733
Jet, no returns, estimated	1
Totals	56,983

Persons employed in 1875 :—

Underground.

Boys of 12 and under 13 years of age	14	
Male young persons of 13 and under 16 years of age	75	
Males above 16 years of age	2,518	
Total underground	2,607	2,607

Above ground.

Boys of 8 and under 13 years of age	68	
Girls „ „ „	None	
Male young persons of 13 and under 18 years of age	524	
Females „ „ „ „	1	
Women above 18 years of age	23	
Males „ „	689	
Total above ground	1,305	1,305
Total persons employed in and about the metalliferous mines		3,912

GENERAL SUMMARY of the produce of mineral in the "Durham District," together with the number of persons employed in and about the mines for the year 1875.

	Statute Tons.
Coal	19,459,248
Fire-clay	437,300
Ironstone	6,085,541
Sundries from the metalliferous mines	56,983
Total	26,039,072
Persons employed	
Underground	57,135
Above ground	15,160
Total	72,295

The following table, No. 1, shows the number of fatal accidents of different kinds, and the number of deaths that have resulted from them in and about the mines in the South Durham and Westmoreland portions of this district during the past five years, 1871 to 1875 inclusive, the last being the year embraced by this Report.

	Number of separate Accidents. Year.					Number of Deaths resulting. Year.				
	1871.	1872.	1873.	1874.	1875.	1871.	1872.	1873.	1874.	1875.
No. 1. EXPLOSIONS OF FIREDAMP	2	–	1	2	1	27	–	1	2	1
FALLS IN MINE.										
Falls of sides	2	5	5	4	–	2	5	5	4	–
Falls of roof	28	27	30	19	35	28	27	30	20	35
Total falls in mine	30	32	35	23	Say 35	30	32	35	24	35
IN SHAFTS.										
Overwinding	1	1	1	2	–	1	1	1	2	–
Ropes and chains breaking	–	1	1	1	1	–	1	1	1	1
Whilst ascending or descending	–	5	1	5	5	–	8	2	5	5
Falling into shaft from top	–	1	–	1	–	–	1	–	1	–
Things falling from top of shaft	–	1	–	–	1	–	1	–	–	1
Falling from part way down	4	1	2	3	1	5	2	2	3	1
Things falling from part way down	–	–	–	–	–	–	–	–	–	–
Sundries in shafts	–	1	–	2	2	–	1	–	2	2
Total in shafts	5	11	5	14	10	6	15	6	14	10

	Number of separate Accidents.					Number of Deaths resulting.				
	Year.					Year.				
	1871.	1872.	1873.	1874.	1875.	1871.	1872.	1873.	1874.	1875.
MISCELLANEOUS UNDERGROUND.										
Explosions of gunpowder	–	1	–	1	3	–	1	–	1	3
Suffocation by gases	–	–	–	1	–	–	–	–	1	–
Irruptions of water	3	–	–	–	–	8	–	–	–	–
Falling into water	–	–	1	–	–	–	–	1	–	–
On incline and engine planes	2	3	11	3	1	2	3	11	3	1
By trams or tubs	21	17	10	16	10	21	17	10	17	10
By machinery	2	–	–	2	2	2	–	–	2	2
Sundries	3	1	2	–	1	3	1	2	–	1
Total miscellaneous underground	31	22	24	23	17	36	22	24	24	17
Total underground	68	65	65	62	Say 63	99	69	66	64	63
ON SURFACE.										
By machinery	–	1	2	1	2	–	1	2	1	2
By boilers bursting	–	–	–	–	–	–	–	–	–	–
By sundries	12	8	8	11	11	12	8	8	11	11
Total on surface	12	9	10	12	13	12	9	10	12	13
GROSS TOTALS	80	74	75	74	76	111	78	76	76	76

A table showing the number of fatal accidents of different kinds, and the number of deaths that have resulted therefrom, in and about the Cleveland (Ironstone Mines) portion of this district during the past three years that the Act has been in operation, 1873 to 1875 inclusive, the last being the year embraced by this Report.

	Number of separate Accidents.			Number of Deaths resulting.		
	Year.			Year.		
	1873.	1874.	1875.	1873.	1874.	1875.
No. 2. EXPLOSIONS OF FIREDAMP	—	—	—	—	—	—
FALLS IN MINE.						
Falls of sides	1	5	10	1	5	11
Falls of roof	7	2	2	7	2	2
Total falls in mine	8	7	12	8	7	13
IN SHAFTS.						
Overwinding	—	—	—	—	—	—
Ropes and chains breaking	—	—	—	—	—	—
Whilst ascending or descending	1	—	1	2	—	1
Falling into shaft from top	2	—	—	2	—	—
Things falling from top of shaft	—	—	—	—	—	—
Falling from part way down	—	—	—	—	—	—
Things falling from part way down	—	—	1	—	—	1
Sundries in shafts	—	—	1	—	—	1
Totals in shafts	3	—	3	4	—	3

	Number of separate Accidents.			Number of Deaths resulting.		
	Year.			Year.		
	1873.	1874.	1875.	1873.	1874.	1875.
MISCELLANEOUS UNDERGROUND.						
Explosions of gunpowder	1	2	—	1	2	—
Suffocation by gases	—	—	—	—	—	—
Irruptions of water	—	—	—	—	—	—
Falling into water	—	—	—	—	—	—
On incline and engine planes	1	—	—	1	—	—
By trams or tubs	8	6	9	8	6	9
By machinery	—	—	—	—	—	—
Sundries	2	—	3	2	—	3
Total miscellaneous underground	12	8	12	12	8	12
Totals underground	23	15	27	24	15	28
ON SURFACE.						
By machinery	—	1	—	—	1	—
By boilers bursting	—	—	—	—	—	—
By sundries	1	4	1	1	4	1
Total on surface	1	5	1	1	5	1
GROSS TOTALS	24	20	28	25	20	29

From the foregoing statements it will be seen that there is an increase in the out-put of mineral from the coal mines during this year, as compared with 1874, of 1,476,399 tons
And from the ironstone mines an increase of - - - 661,062 ,,

Total increase 2,137,461

There is also an increase for the year of 2,842 persons employed in and about the mines as compared with the previous year; while in the coal mines the number of deaths are the same as in the three preceding years, viz., 76, but there is an increase of nine deaths in the ironstone district, viz., to 29, which is the largest number of deaths that have occurred in one year since these mines were under inspection.

Taking the number of deaths as they stand on the list for the coal mines at 63 underground and 13 above ground, which number includes three deaths resulting from accidents occurring during 1874, there appears to be 82·9 per cent. of the accidents happening below, and 17·1 per cent. above ground, and taking them under the four sections of underground accidents, which it has been the custom to classify them, we have the following proportions, viz. :—

1 from explosion of fire damp	=	1·58 per cent.
35 from falls of roof and sides in the mine	=	55·55 ,,
10 from accidents of various kinds in shafts	=	15·87 ,,
17 from miscellaneous causes underground	=	27·00 ,,
63		100·00 ,,

Or, taken as a whole, for both under and above ground accidents, we have the following results, viz. :—

1 from explosion of firedamp	=	1·31 per cent.
35 from falls of roof and sides in the mine	=	46·06 ,,
10 from accidents of various kinds in the shafts	=	13·16 ,,
17 from miscellaneous causes underground	=	22·37 ,,
13 from accidents on surface	=	17·10 ,,
76		100·00

Again, if we compare the accidents in the Cleveland Ironstone Mines portion of the district in the same way, we find that of the 29 deaths that have occurred during the year, 28 of them were below ground, and one above ground, or

96·55 per cent. below, and
3·45 per cent. above ground

100·00

and they appear to be in the following proportion, viz.:—

13	from falls of roof and sides in the mine	=	44·83 per cent.
3	from miscellaneous in the shafts	=	10.34 „
12	from miscellaneous underground	=	41.38 „
1	on surface	=	3.45 „
29			100·00 „

From the above statement it will be seen that the Cleveland Ironstone Mines, as a rule, compare favourably with the accidents in the Durham Coalfield, except so far as regards the miscellaneous underground, and it may not be amiss to here make a few remarks on the comparisons of the two districts.

1st. The explosions of gas. There has never to my knowledge been a life lost in the ironstone mines from this cause, yet it cannot be said they are entirely free from gas; there is a shale roof to these mines called the "Jet Shale," which contains a little gas, and it occasionally finds its way into the working places through fissures after the firing of shots, and from the great height of the mine it is sometimes unobserved until exploded, and there has been during the last year two cases of this description where the miner has been slightly burnt.

2nd. The falls of roof, &c. If we take the deaths resulting from this cause in the ironstone mines the percentage is less than in the coal mines, although the out-put of mineral per life lost (nearly 210,000 tons), it is not so favourable; yet, taking into consideration the dangerous nature of the work and difficulties to be encountered in working so thick a bed of stone (from six to sixteen feet), the accidents are less than in many cases might be looked for. It will be observed from the table that there has only been two deaths from falls of roof during the year under notice, the remaining 11 have resulted from falls of side or the ironstone during the process of getting. The most fruitful source of accidents of this class is from what is termed "baring" (using a stout iron crowbar) the stone down after blasting, it is too frequently the case that the miner has to climb up several feet to "bar" the top part of the stone, and falls taking place unexpectedly he has not time to clear himself, and often the most experienced miners are caught in this way.

3rd. Shaft accidents. This class of accident is again less in proportion to those in the coal mines, but this is accounted for by the fact that about 47 per cent. of the stone is worked by "day levels," cut into the hill sides, and where there are shafts they are not so deep as in the coal mines, consequently not the danger.

4th. Miscellaneous underground. Of this class of accident those from crushes by tubs are by far the most serious, and show a bad result as compared with the coal mines; of the nine persons killed during the year, five were horse-drivers, one a tub coupler, one a trapper, one a roadman, and one a miner. It is lamentable to find such a large percentage of deaths arise from this cause, nearly all occurring on the main horse roads, the tubs are built large and strong and carry from 35 to 40 cwts. of stone each, they are unwieldy and quite beyond the control of the youth whose duty it is to take them in gangs from the face of the workings to the pit or engine landing, and I can see no way to obviate this except by employing no other than strong men as horse-drivers.

5th. Surface accidents. The accidents from this cause are naturally less in Cleveland than in Durham, from the fact that a much less number of people are required on the surface here than at the coal mines; the stone is tipped direct into the trucks and there are neither screeners, walers, or apparatus men, &c., required, hence there is less risk.

There has only been one life lost in the metalliferous mines during the year under notice, and this was caused by a fall of ground in one of the lead mines in Weardale; while the miners were re-adjusting timber they appear to have unintentionally knocked out a bar which caused the fall to take place on deceased.

The following accidents require some further explanation than what is given in the schedule.

No. 11 accident took place at a new winning at Hutton Henry, near to Castle Eden, causing the death, it is supposed, of Mark Curtis, whose body has not yet been recovered. The pit was being sunk through the Permian and was 20 feet diameter finished size, it had passed through 60 yards of clay, sand, marl, &c., also 48 yards of limestone, making a total depth of 108 yards sunk; the top part of the pit was walled for about 64 yards with firebrick lumps

12 inches in the bed; on the morning of the accident some workmen descended the pit for the purpose of boring a hole into the lower measures, and observing some pieces of walling had fallen down, an examination of the shaft was made, which revealed the fact that it was giving way on the north-east side about 50 yards from the surface, the manager at once determined to fill it up, but before much progress had been made it collapsed altogether, the walls, cribs, and other timber used in supporting the sides while sinking through the sand, &c., fell in, followed shortly after by the head-stocks and all temporary wooden erections on the surface, and it is supposed at the same time the deceased who was engaged on the pit top had fallen with them although not observed by anyone.

Mr. Coulson, of Durham, an eminent colliery sinker, was called in to examine the pit, with a view to its being opened out. I append copy of his report, with which I quite agree. To attempt opening through all this wreck, and with the broken sides of the pit, would be attended with very great danger, and I am also of opinion, from the description given of the state of the shaft at the time the bank erections went down, that the body of Curtis will not be within the circle of the pit, but will have fallen into the cavity at the sides where an immense quantity of sand, &c., had fallen out and filled the lower part of the pit.

"Shamrock House, Durham, 25th January 1875.

"Gentlemen, Messrs. the Hutton Henry Coal Co., Limited.

"Agreeable to your request, I have examined your 'Richardson' shaft at Hutton "Henry Colliery Winning.

"I find that the walling in the above-named shaft gave way at about 25 fathoms from the "surface, whereupon you commenced to fill the shaft up, which was the only safe means you "had, in fact the only means to secure the pit again.

"Also, that on the 19th instant, on account of the sand wasting from behind the walling "where it (the walling) had broken the shaft fell together, and it is supposed a workman "employed filling the pit up either fell, or through fright run the wrong way into the pit.

"No person saw him go down the shaft, but it is known that he was employed filling the "pit up at the time of the accident, and he has not since been seen.

"To open the shaft out again it will be necessary to fill it up to the surface, and let it "remain so for at least three months before anything is done, after which it will require nine "months to clear it out, and make it good down on to the limestone, if it can be done at all; "thus it will require 12 months before the body of the man can be recovered.

"I think if the pit can be opened out and made good again that there is very little or no "chance of finding the body of the man, as he may be lying out of the circle of the pit "altogether, *i.e.*, in the side where the *débris* has fallen out, or he may be crushed by the "weight on him, and that there will be great danger of losing more life in the attempt.

"Yours faithfully,

"(Signed) Wm. Coulson."

The pit has since been filled up to the surface and abandoned, and another commenced sinking at a distance of about 200 yards to the south of it.

No. 63 accident took place at the bottom of the shaft at Wheatley Hill Colliery, and was in my opinion an act of gross carelessness on the part of the onsetter and the breaksman; at the inquest the evidence was so conflicting that the jury found it impossible on which of them to fix the blame. The cage is a "double deck" one, and on the afternoon of the accident some men came to the pit bottom, in order to be drawn up, part of them getting into the upper and part into the lower deck, and a signal was given to draw away, three raps, meaning "men on;" however, before the breaksman moved the engine some boys also came to the bottom for the purpose of ascending, when the onsetter gave another signal, one rap, meaning "hold;" some of the boys got into the lower deck then standing on the "keps," at a level with the landing plates, who filled it, the onsetter took deceased and lifted him into the upper deck, where he had to pass between some buntons, only 20 inches apart (a thing he had no right to do), and while so doing the engine was started, and the poor little fellow being only partly into the cage was caught between the middle hoop of the cage and a bunton, and his head was nearly severed from the body; if the onsetter and those at the bottom of the pit at the time, who gave evidence, are to be believed, the three raps for "men on," then after a pause one rap for "hold," were correctly given according to the printed code of signals; but, on the other hand, if we believe the statements of the banksman and breaksman, there were four distinct raps given without intermission, which means "all clear," then he had a right to draw away, but he ought to have considered that before the first men were allowed to get into the cage a proper signal was previously given, and answered by the banksman, that men were coming up in the next cage, therefore he was to blame for acting on the signals without having them

repeated. I consider both parties were guilty of great recklessness, and they ought to have been severely punished by the magistrates instead of being admonished.

No. 80 accident took place in the thick ironstone bed at Eston, in Cleveland, where two miners were killed by a fall of the stone in their working place. It appears they had gone to work as usual on the morning of the accident about 6 o'clock, and commenced, Hopper to drill a hole in a large piece of stone, and Curry to wedge what is termed "a leg" out from underneath it; in about an hour afterwards a miner went into their place, and seeing the danger warned them to desist and sprag the stone as required by the rules of the mine; however, not heeding this advice they went on working until the stone fell and killed them both on the spot. The proper timbers to be used were pointed out to them, and there is no doubt they were guilty of great carelessness in violating one of the Special Rules of the mine which provides "that in all cases of cutting out a 'leg' he is to put in a punch or sprag prop."

No 96 accident took place at Sunderland Bridge, now "Croxdale" Colliery, by an explosion of gas in the sinking pit. Two pits were in the course of sinking to the lower seams and were situated about 38 yards from each other, the east pit had reached a depth of 90 yards from the surface, or about six yards below the Hutton seam; in this pit is fixed the main set of pumps, and a drift driven in the coal over to the west pit which had only reached a depth of 64 yards, when a feeder of water was met with and a two and a half inch bore hole put down into the drift for the purpose of taking this water to the pumps; however, the hole was found to be too small to contain the feeder, and the water usually stood about 12 feet deep in the west pit, and it was determined to enlarge it to six inches diameter, and was holed into the drift about 3 o'clock in the morning, and at 7.30 a.m. it had run all the water out of the west pit, and thus relieving the pressure from the fissures met with in the bore hole, a large quantity of gas was given off and carried down by the force of the waterfall into the drift, where it was ignited at the deceased's candle, causing a serious explosion, blowing him across the east pit into the sump, where he was shortly afterwards taken out quite dead; both pits had been examined that morning by the master sinker before work commenced, and found to be all right. On the day of the accident I examined both pits, and found the west pit quite free from gas, and the deceased's father, who was charge man in that pit, and at work at the time of the explosion, told me he had never seen any gas in it, but on descending the east pit I found it foul back into the shaft, although they had a 33-inch fan running at the rate of 520 revolutions per minute; another of 45 inches diameter was put on and run at the rate of 500 revolutions per minute, with the air pipes up to within six yards of the face. After running this way for over a week, I again went down but could get no further than the end of the air pipes, so strong was the feeder of gas coming off. The west pit was eventually sunk to the drift level, partly without lights at all, and partly with safety lamps; the shots were all fired by electricity, and whenever any feeder of gas was ignited the pumps were stopped in the east pit, and the water allowed to rise until the flame was put out; the gas was at last collected behind cement walling and conducted to the surface in two four-inch iron pipes, where it burns with a flame several feet in length, and serves to light up the place at night.

Falls in the Mine.

The deaths from falls in the coal mines during the past year are 35, which is much above the average of previous years; nine of the deaths have been caused by falls of coal, nearly every one of which are preventible by a proper observance to the rules of propping or spragging the juds while holing, and it seems a great pity this rule cannot be more stringently enforced. Three deaths have been caused by colliers removing the timber after it has been set by the deputy on a pretext that it was in the way of their working, four from men continuing to work after observing the stone to be bad, and not sending for the officer in charge, or leaving the place until it was examined and made safe, the others cannot be accounted for and are probably from accidental causes.

I have never found any lack of timber either in the pit or on the surface ready to be sent down, and I believe the rule to leave in each working place a sufficient quantity of props, cut into proper lengths for the collier to set, in case of any change in the roof, is well adhered to.

The deputies whose duty it is to set the timber and see that the men are working safe, are as a rule a careful set of men, who take a pride in their work, and they are selected for their intelligence and fitness from among their fellow workmen, and are properly trained to the duties they have to perform.

Before leaving the subject of "falls in the mines," although they are unusually high this year, it may not be uninteresting to give the following table of comparisons between the two portions of this district, and the average for the whole kingdom showing the number of tons

Fig. 1.

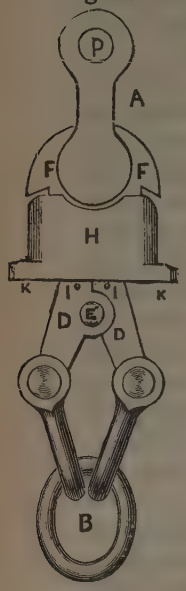


Fig. 2.

Fig. 3.

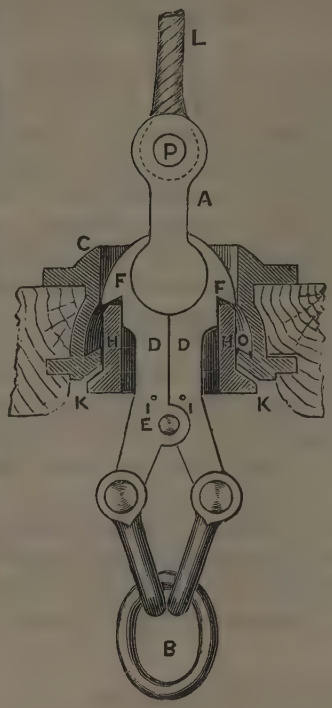


Fig. 5.

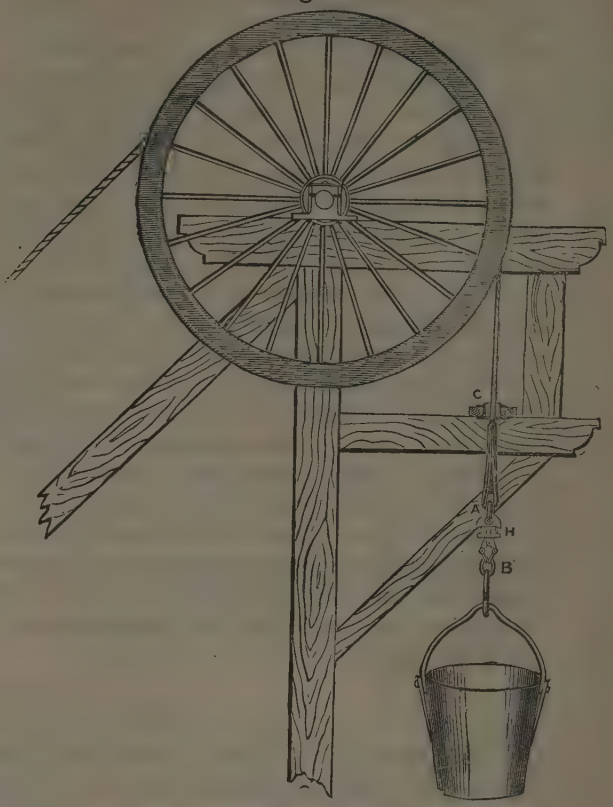
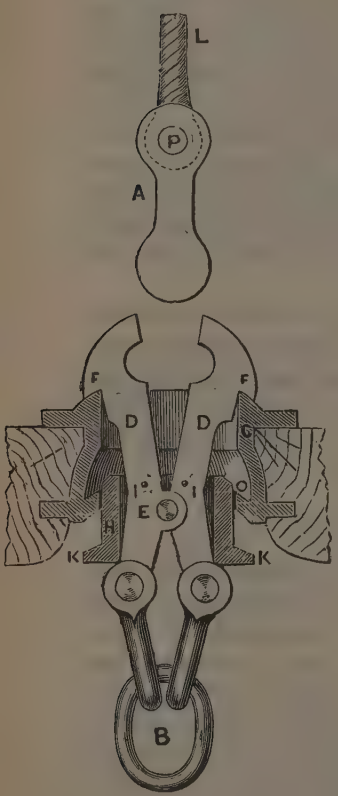


Fig. 4.



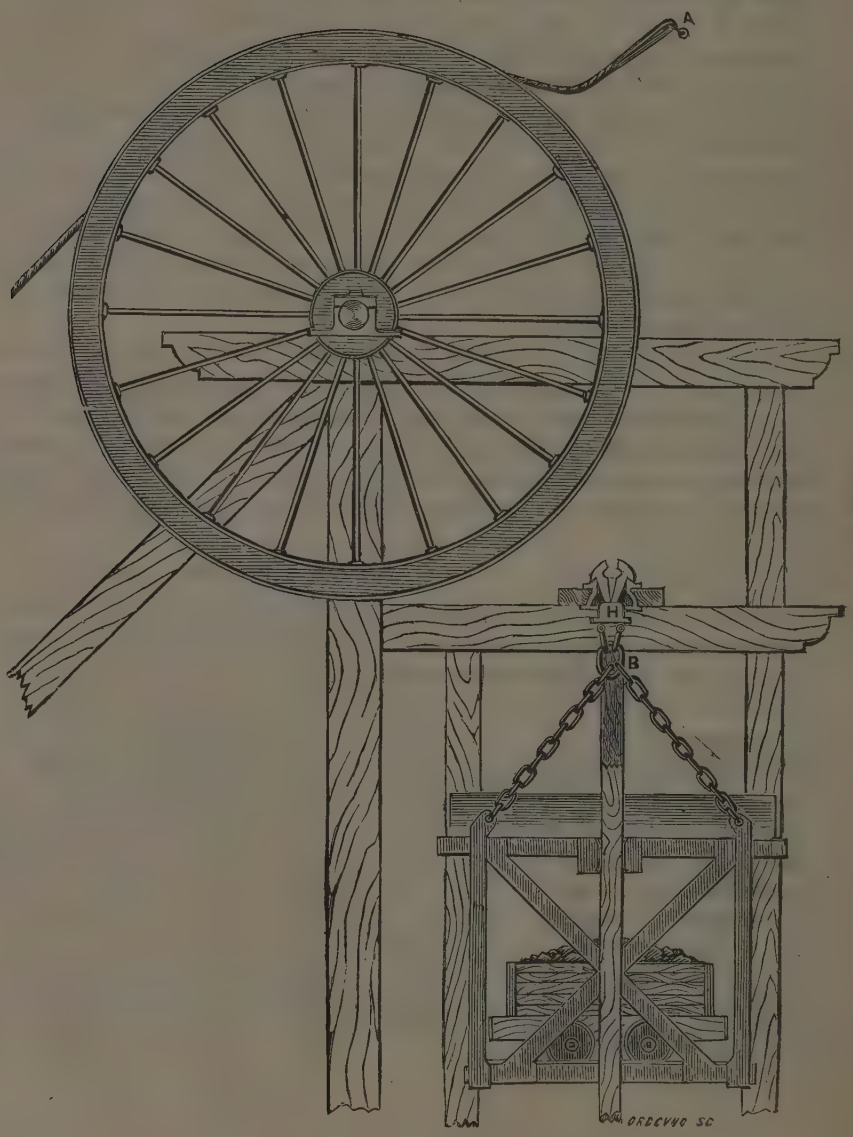


Fig. 6.

And the following description of the drawings will be found sufficiently explanatory.

Fig. 1 is a front view of the hook.

Fig. 2 is an edge view of the hook.

Fig. 3 is a front view of the whole apparatus, with the supporting ring and clamp in section.

Fig. 4 is an edge view of the same, with the supporting ring in section.

These last two figures show the hook just before and after the liberation of the lifting rope.

The same letters refer to the same parts in all the figures.

The lifting rope is attached to the shackle A, and the load to the connecting link B.

The supporting ring C (through which the rope is constantly working), is a fixture in a balk of timber, or iron girder, at the pit top.

The hook consists of a pair of jaws D, D, working on a centre pin E, in such a manner that the weight of the load has a tendency to open the upper limbs, which clip the strong centre pin of the shackle A. The upper limbs are formed externally with jaw hooks F, F. The jaws are kept together, and made to retain the shackle pin by means of the clamp H, which is held in position by the pins I, I.

In case of overwinding the jaw hooks (held together by the clamp), pass freely into the ring C, but the projections K, K, of the clamp coming into contact with the bottom flange of the said ring hold the clamp stationary, while the jaws are being pulled through, the result being that the pins I, I, are sheared off, and the jaw hooks released from the restraint of the clamp. The internal diameter of the ring being the same as the width across the jaw hooks F, F, the rope remains secure, until the jaw hooks reach the top of the ring, when, by the action of the weight of the load, they are forced open, and so hook on to the top of the supporting ring C, as shown in Fig. 4, the rope passing harmlessly over the pulley.

The recess O in the ring C is intended to meet an imaginary case that experiment shows to be almost impossible, namely, that if the engine is reversed after the pins I, I, are cut, and before the hooks reach the top of the ring, the jaws will then hook into the recess, and the load remain suspended in perfect safety.

It will be observed that the upper edge of the ring C is curved to match the sweep of the jaw hooks when opening. By this arrangement all shock is avoided.

Fig. 5 shows the apparatus applied to a pit in course of being sunk; and Fig. 6, the case of a regularly working pit, with the cage suspended by the detaching hook, in consequence of overwinding.

To complete the plans it will be necessary to here give drawings, Figs. 7 and 8, showing the rings and balks of wood for supporting them and carrying the load after the rope is detached.

Fig. 7.

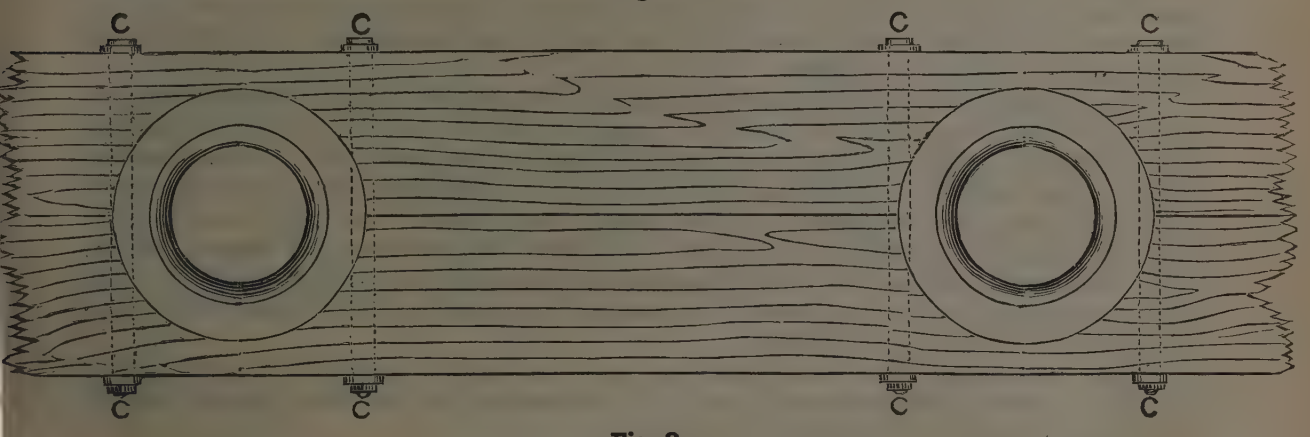


Fig. 8.

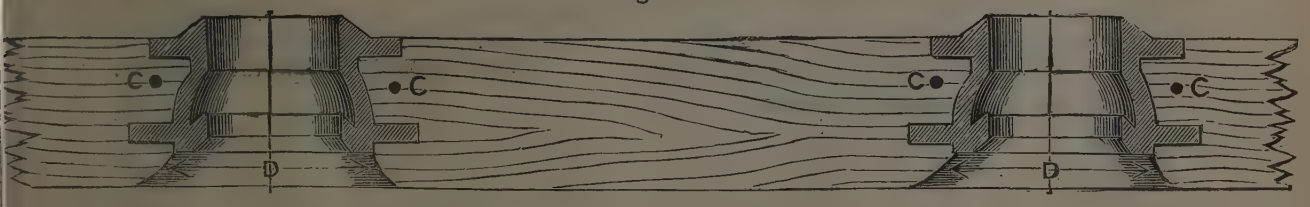


Fig. 7 is a plan showing two rings fixed in the timber at the proper distance apart to suit each rope.

Fig. 8 is a vertical section, showing the position of the rings in the timber, through the line A. B, where the balks are joined. The bolts C, C, for keeping the balks together, should be put through between the flanges of the ring.

The rings should be firmly fixed in two stout balks of oak timber, bolted together and hollowed to match the external shape of the ring. For an ordinary winding pit fitted with two cages, both the rings can be put into the same piece of timber as seen in the drawing above, the strength of wood under the bottom flange is of course varied in proportion to the load the rings have to carry; care must be taken to have the approaches D, D, to the bottom of the rings rounded out sufficiently to clear the projections K, K, of the clamp H (Fig. 3); to ensure this a rim is left on the underside of the bottom flange. The line of rope should pass down the centre of the ring, and the supporting timber should be as near to the pulley as possible, care being taken that the capping of the rope shall be able to rise fairly above the top of the ring without being thrown out of line. The timber must be made thoroughly secure, as it will have to resist the upward strain of shearing the pins off, and downward pressure of the weight of the load.

The weight of the "hook" is, for a three ton load only 25 lbs; for a five ton load, 60 lbs.; and for an eight ton load, 150 lbs., the length being from 18 inches to 30 inches; other sizes in proportion; the hook is simple in construction, effectual in action, and not liable to get out of order, and can be applied at a trifling cost to either old or new works.

I would probably not have dwelt so long on the subject of overwinding and "safety hooks" had I not been thoroughly convinced of the necessity of the use of such an instrument in every instance where men's lives, in ascending or descending, are entrusted to the care of human beings; overwinds have happened in the hands of the most careful and experienced breaksmen, and we know not how soon they may occur again. It should not be forgotten that there ought at all times to be the maximum amount of caution used to save life instead of a mere sufficiency.

My previous convictions have been materially strengthened during the present year, when two cases of overwinding have occurred, one at Crook Hall Colliery, near Durham, where two lives were saved, the other at Cassop Colliery, where one man's life was saved; in both cases the above-mentioned "hook" was used, and acted admirably.

Although there are a few "jet" mines open in Cleveland I have been unable to procure returns from them, they are chiefly worked by cuttings in the hill sides a few yards in length by labouring men, who have no system of mining, and appear to work there only when their usual employment is suspended.

I have met with no cases in which boys are allowed to enter the mine under the specified age, and the full amount of education directed in the Act appears to be generally supplied, and I believe the boys are never kept in the mine beyond the time allowed by the Act with the consent or knowledge of the colliery owners.

I have not found it necessary to recommend proceedings to be taken against any of the mine owners or managers during the year; there seems to be a disposition on their part to carry out the Act, and I have to acknowledge the readiness with which they have accepted and acted upon any suggestions of mine.

The members of the board for examinations who have acted for this district during the past year are Messrs. Dale, Morton, and Wood, representing the colliery proprietors, Messrs. Stobart, Marley, and Steavenson, representing the mining engineers, and Messrs. Foreman, Ramsden, and Davidson, representing the workmen. Mr. Davidson died during the latter part of the year, and the vacancy has (this month) been filled by the appointment of Mr. Halliday. The three gentlemen appointed by the board as examiners are Messrs. Daglish, Steavenson, and Foreman; the annual examination took place at Darlington on the 26th July last, when 25 candidates presented themselves for examination, 20 of whom were recommended for certificates of competency.

Mr. J. B. Atkinson acted as my assistant up to the end of August last, when by your sanction an exchange was made with Mr. W. N. Atkinson of the Newcastle District, who has acted as my colleague, assisting since that time.

I have, &c,

THOS. BELL,

Her Majesty's Inspector of Mines.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in MR. BELL'S DISTRICT, comprising SOUTH DURHAM, WESTMORELAND, and the NORTH RIDING of YORKSHIRE, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Jan. 4	1	Eston	Eston	Bolckow, Vaughan, & Co., Limited.	Joseph Spicer	Miner	21	Fall of stone	–	1	–	–	–	1
„ 8	2	Auckland Park	Bishop Auckland	Ditto	Christ. Wheatley	Driver	14	Run over by set of full tubs	–	–	–	1	–	1
„ 9	3	Shildon Lodge	Ditto	Ditto	William Shenton	Hewer	43	Burnt by explosion of powder, at bank, while "pitching" his shot.	–	–	–	–	1	1
„ 11	4	Wheatley Hill	Castle Eden	Original Hartlepool Coal Co., Limited.	S. H. Williams	Ditto	23	Fall of stone	–	1	–	–	–	1
„ 12	5	Kilton	Saltburn	Kilton Ironstone Co.	Benjamin Blewitt	Sinker	20	Fell out of a kibble, which caught a bunton in the shaft.	–	–	1	–	–	1
„ 13	6	Cragg Head	Lanchester	Hedley Bros.	Robert Robson	Waggon-rider	47	Run over by waggons on the branches.	–	–	–	–	1	1
„ 13	7	Rainton (Nicholson Pit).	Rainton	Marquess of Londonderry	George Moore	Hewer	22	Fall of stone	–	1	–	–	–	1
„ 13	8	Framwellgate	Durham	Stevenson, Jacques, & Co.	George Mosley	Shifter	30	Explosion of powder while drilling out a shot.	–	–	–	1	–	1
„ 15	9	Lofthouse	Saltburn	J. W. Pease and Partners	Robert Wilson	Miner	35	Fall of stone	–	1	–	–	–	1
„ 15	10	Liverton	Ditto	Liverton Iron Co., Limited	Florelli Little	Ditto	22	Fall of roof	–	1	–	–	–	1
„ 19	11	Hutton Henry	Wingate	Hutton Henry Coal Co., Limited.	Mark Curtis	Labourer	55	Buried in a shaft, owing to the sides giving way. Body not recovered.	–	–	1	–	–	1
„ 19	12	Whitworth Park	Whitworth	R. S. Johnson & Co.	William Thompson	Onsetter	38	From injuries received on 30th December 1874.	–	–	–	1	–	1
„ 20	13	Upleatham	Marske	J. W. Pease and Partners	John Vickers	Miner	35	Fell from a ladder in the mine	–	–	–	1	–	1
„ 22	14	South Belmont	Guisbro'	North of England Indtl. Iron and Coal Co., Limited.	George Howlett	Ditto	27	Fall of stone	–	1	–	–	–	1
„ 25	15	East Hetton	Kelloe	East Hetton Coal Co.	Michael Conway	Screenman	40	Crushed between waggons at bank	–	–	–	–	1	1
Feb. 5	16	Huntcliffe	Saltburn	Bell Bros., Limited	Philip Hooper	Miner	23	Fall of roof	–	1	–	–	–	1
„ 7	17	Browney	Durham	Ditto	William Blizzard	Sinker	18	Fell out of kibble while ascending shaft.	–	–	1	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Feb. 8	18	Littleburn	Durham	North Brancepeth Coal Co., Limited.	John Culley	Driver	13	Fell into a large coal-hopper at bank, and was suffocated.	–	–	–	–	1	1
„ 12	19	Littletown	Littletown	Earl of Durham	Michael Moss	Pony putter	13	Head crushed between tub and crown-tree.	–	–	–	1	–	1
„ 22	20	Esh	Durham	J. W. Pease and Partners	George Fletcher	Driver	13	Crushed between tubs and wall-side.	–	–	–	1	–	1
„ 24	21	Chester South Moor.	Chester-le-Street	Thiedemann and Wallis	Thomas Holdsworth	Ditto	14	Crushed by tubs	–	–	–	1	–	1
„ 26	22	Brandon. C pit	Durham	Straker and Love	Thomas Michell	Hewer	23	Fall of roof, on 1st October 1874	–	1	–	–	–	1
Mar. 1	23	Hedley Hill	Tow Law	Weardale Iron & Coal Co., Limited.	Thomas Smith	Labourer	17	Struck on the head by a pump handle.	–	–	–	1	–	1
„ 2	24	Iveston	Consett	Consett Iron Co., Limited	Patrick Donely	Hewer	25	Fall of top coal	–	1	–	–	–	1
„ 2	25	Cragg's Hall	Saltburn	J. W. Pease and Partners	Richard Mago	Miner	22	Fall of stone	–	1	–	–	–	1
„ 4	26	Ushaw Moor	Durham	H. Chaytor & Co.	Thomas Blower	Hewer	40	Fall of roof	–	1	–	–	–	1
„ 5	27	Coxhoe	Coxhoe	J. Morrison and Partners	Jonathan Eddy	Ditto	20	Fall of stone. Died 5th July	–	1	–	–	–	1
„ 5	28	Wheatley Hill	Thornley	Original Hartlepool Coal Co., Limited.	John Hicks	Ditto	25	Ditto	–	1	–	–	–	1
„ 11	29	Charlaw	Durham	Elliot and Hunter	John Turnbull	Blacksmith	53	Injured while laying on a new rope.	–	–	–	–	1	1
„ 11	30	Storey Lodge	Bishop Auckland	T. Charlton & Co.	Benjamin Taylor	Breaksman	26	By becoming entangled in the machinery while breaking an underground engine.	–	–	–	1	–	1
„ 11	31	Eston	Eston	Bolckow, Vaughan, & Co., Limited.	George Powell	Driver	18	Run over by waggons	–	–	–	1	–	1
„ 16	32	Brancepeth	Willington	Straker and Love	William Adams	Bank-inspr.	—	Run over by a locomotive on surface.	–	–	–	–	1	1
„ 19	33	Silksworth	Sunderland	Marquess of Londonderry	William Wigham	Fitter	38	Fell out of cage	–	–	1	–	–	1
„ 23	34	Littleburn	Durham	North Brancepeth Coal Co., Limited.	Isaac Pope	Hewer	35	Fall of stone	–	1	–	–	–	1
April 2	35	Murton	Murton	South Hetton Coal Co., Limited.	William Bartlett	Shifter	70	Crushed by tub	–	–	–	1	–	1
„ 5	36	Shildon Lodge	Shildon	Bolckow, Vaughan, & Co., Limited.	John Lodge	Hewer	31	Fall of coal	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
April 5	37	Kilton	Saltburn	Kilton Ironstone Co.	William Sharid	Sinker	35	Stone fell out of kibble on to him	–	–	1	–	–	1
„ 6	38	Houghton	Houghton	Earl of Durham	Robert Forster	Wasteman	62	Fall of stone	–	1	–	–	–	1
„ 7	39	Derwent	Medomsley	Consett Iron Co., Limited	William Austen	Driver	14	Crushed by tubs	–	–	–	1	–	1
„ 9	40	Shildon	Bishop Auckland	Shildon Coal Co.	John Morgan Wright	Ditto	15	Crushed between wall-side and tub	–	–	–	1	–	1
„ 9	41	South Durham	Ditto	South Durham Coal Co.	William Hiner	Shifter	25	Returned to a shot before it exploded.	–	–	–	1	–	1
„ 13	42	Murton	Murton	South Hetton Coal Co., Limited.	William Cowey	Ditto	49	Fall of stone	–	1	–	–	–	1
„ 13	43	Eston	Eston	Bolckow, Vaughan, & Co., Limited.	James Moore	Miner	40	Ditto	–	1	–	–	–	1
„ 15	44	East Hetton	Kelloe	East Hetton Coal Co.	John Wetherall	Sinker	52	Sling chain broke while putting in spears.	–	–	1	–	–	1
„ 16	45	Ditto	Ditto	Ditto	James Brown	Ditto	37	Fell from five quarter seam to main coal while repairing shaft.	–	–	1	–	–	1
„ 17	46	Lofthouse	Saltburn	J. W. Pease and Partners	Leonard Griggs	Trapper	14	Crushed by tubs	–	–	–	1	–	1
„ 19	47	Cliffe	Ditto	Bell Bros., Limited	James Taylor	Overman	39	Crushed by cage	–	–	1	–	–	1
„ 21	48	Cold Knott	Crook	Wooler, Chapman, and Co.	Thomas Miller	Hewer	28	Fall of top coal	–	1	–	–	–	1
„ 22	49	Eston	Eston	Bolckow, Vaughan, & Co., Limited.	Edward Warner	Miner	48	Fall of a large prop	–	–	–	1	–	1
„ 24	50	Littleburn	Durham	North Brancepeth Coal Co., Limited.	James Willans	Deputy	55	Fall of roof	–	1	–	–	–	1
„ 29	51	Rosedale	Rosedale	Rosedale and Ferry Hill Iron Co., Limited.	John Wrightson	Driver	16	Crushed by tubs	–	–	–	1	–	1
„ 30	52	Storey Lodge	Evenwood	T. Charlton & Co.	Stephen Place	Screenman	44	Crushed by a truck under screens	–	–	–	–	1	1
May 4	53	Moorsley	Moorsley	North Hetton Coal Co.	John Hills	Wasteman	68	From injuries received by cage on the 16th September 1874.	–	–	1	–	–	1
„ 5	54	Haswell	Haswell	Haswell, Shotton, and Easington Coal & Coke Co., Limited.	J. W. A. Perryman	Trapper	13	Crushed between waggons at bank	–	–	–	–	1	1
„ 7	55	Shildon Lodge	Shildon	Bolckow, Vaughan, & Co., Limited.	Joseph Caygill	Wasteman	64	Fall of coal and stone	–	1	–	–	–	1
„ 12	56	South Hetton	South Hetton	South Hetton Coal Co., Limited.	Thomas Cummings	Screener	15	Crushed by a truck under screens	–	–	–	–	1	1

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List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
May 13	57	Castle Eden -	Castle Eden -	Castle Eden Coal Co. -	Samuel Spears -	Sinker -	41	Large piece of iron fell from bank on to him.	–	–	1	–	–	1
„ 14	58	Sacriston -	Durham -	Elliot and Hunter -	Joseph Peel -	Shaft boy -	16	Scalded by water from a boiler while ascending a staple. Died 8th July.	–	–	–	1	–	1
„ 19	59	Brancepeth -	Durham -	Straker and Love -	James Thompson -	Hewer -	53	Fall of roof ; died 1st June -	–	1	–	–	–	1
„ 20	60	Lumley, 6th pit	Fence Houses -	Earl of Durham - -	Oliver Armstrong	Putter -	15	Fall of stone - - - -	–	1	–	–	–	1
„ 20	61	Skelton Park -	Saltburn -	Bell Brothers, Limited -	John Jefferson -	Plate layer	26	Crushed by tubs - - -	–	–	–	1	–	1
„ 25	62	Stanley -	Stanley -	J. W. Pease and Partners	Henry Bruder -	Hewer -	29	Ditto ; died 4th June -	–	–	–	1	–	1
June 5	63	Wheatley Hill -	Thornley -	Original Hartlepool Coal Co., Limited.	David Turner -	Driver -	13	Crushed by cage - - -	–	–	1	–	–	1
„ 5	64	Page Bank -	Willington -	Bell Brothers, Limited -	John Buttery -	Hewer -	37	Fall of coal - - -	–	1	–	–	–	1
„ 8	65	Trimdon Grange	Trimdon -	Trimdon Grange Coal Co.	John Martin -	Ditto -	23	Ditto - - - -	–	1	–	–	–	1
„ 11	66	Murton -	Murton -	South Hetton Coal Co., Limited.	George Dodds -	Ditto -	25	Fall of Stone - - -	–	1	–	–	–	1
„ 11	67	Haswell -	Haswell -	Haswell, Shotton, and Easington Coal and Coke Co., Limited.	Robert Brown -	Ditto -	22	Ditto - - - -	–	1	–	–	–	1
„ 12	68	Bearpark -	Durham -	Bearpark-Brancepeth Coal Coal Co., Limited.	William Richardson	Fireman -	38	Crushed by waggon under screens	–	–	–	–	1	1
„ 14	69	Broom Park -	Ditto -	North Brancepeth Coal Co., Limited.	George Ord -	Onsetter -	16	Crushed by cage at the bottom -	–	–	1	–	–	1
„ 15	70	Upleatham -	Saltburn -	J. W. Pease and Partners	William Oliver -	Miner -	30	Fall of stone ; died 24th July -	–	1	–	–	–	1
„ 16	71	Haswell -	Haswell -	Haswell, Shotton, and Easington Coal and Coke Co., Limited.	William Hall -	Shifter -	61	Ditto - - - -	–	1	–	–	–	1
„ 18	72	Elemore -	Fence Houses -	Hetton Coal Co. -	James Watt -	Hewer -	55	Ditto - - - -	–	1	–	–	–	1
„ 24	73	Skelton Park -	Skelton -	Bell Brothers, Limited -	Thomas Wright -	Miner -	26	Ditto - - -	–	1	–	–	–	1
„ 25	74	Upsal - -	Eston - -	Bolckow, Vaughan, & Co., Limited.	Levi Chambers -	Ditto -	40	Crushed by tubs - - -	–	–	–	1	–	1
July 2	75	Murton -	Murton -	South Hetton Coal Co., Lim.	Matthew Roddy -	Wasteman	50	Ditto - - -	–	–	–	1	–	1
„ 15	76	Westerton -	Bishop Auckland	Bolckow, Vaughan, & Co., Limited.	John Heffern -	Hewer -	36	Fall of stone - - -	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
July 15	77	Hargill -	Bishop Auckland	Wooler, Chapman, & Co.	Thomas Gargett -	Tub greaser	13	Run over by tubs on the surface -	–	–	–	–	1	1
„ 20	78	Howden -	Crook - -	Geo. Hutchinson & Co. -	John Yarker -	Hewer -	—	Fall of stone - - -	–	1	–	–	–	1
„ 30	79	Lumley -	Fence Houses -	Earl of Durham - -	Patrick Reid -	Ditto -	22	Fall of coal; died 18th Aug. -	–	1	–	–	–	1
Aug. 5	80	Eston - -	Eston - -	Bolckow, Vaughan, & Co., Limited.	Robert Hopper -	Miner -	32	Fall of stone while cutting out a leg	–	2	–	–	–	2
					Aaron Curry -	Ditto -	18							
„ 9	81	Waterhouses -	Sleetburn -	J. W. Pease and Partners	John Butford -	Deputy -	34	Ditto - - - -	–	1	–	–	–	1
„ 23	82	Rosedale, West	Rosedale -	Rosedale and Ferry Hill Iron Co., Limited.	John Mason -	Miner -	31	Fall of ironstone - - -	–	1	–	–	–	1
„ 24	83	Binchester -	Bishop Auckland	Bolckow, Vaughan, & Co., Limited.	Robert Sweeting -	Sinker -	26	Fall of stone - - - -	–	1	–	–	–	1
„ 27	84	Emma - -	Crook - -	J. W. Pease and Partners	John Sharp -	Bank head lad.	18	Breaking of endless chain at bank top.	–	–	–	1	–	1
„ 28	85	Whitworth Park	Whitworth -	Johnson and Reay -	Henry Farris -	Driver -	12	Fall of stone - - - -	–	1	–	–	–	1
„ 28	86	Hetton -	Hetton - -	Hetton Coal Co. - -	Joseph Short -	Hewer -	33	Ditto - - - -	–	1	–	–	–	1
Sept. 2	87	South Hetton -	South Hetton -	South Hetton Coal Co., Lim.	Samuel Preston -	Putter -	19	Crushed by tub - - -	–	–	–	1	–	1
„ 7	88	Hutton Henry	Wingate -	Hutton Henry Coal Co., Limited.	William Patterson	Changer and Graither.	32	Crushed by pumping quadrant -	–	–	–	–	1	1
„ 10	89	Stanley -	Crook - -	J. W. Pease and Partners	John Riley -	Driver -	13	Crushed by cage - - -	–	–	1	–	–	1
„ 11	90	Westwood -	Consett -	Consett Iron Co., Limited	Owen Jones -	Screener -	68	Fell off screens - - -	–	–	–	–	1	1
„ 15	91	Belmont -	Guisbro' -	Weardale Iron and Coal Co., Limited.	William Gardner -	Coupling tubs	14	Crushed by tubs - - -	–	–	–	1	–	1
„ 23	92	Eston - -	Eston - -	Bolckow, Vaughan, & Co., Limited.	Benjamin Owen -	Driver -	15	Ditto - - -	–	–	–	1	–	1
„ 29	93	Upleatham -	Marske -	J. W. Pease and Partners	Joseph Jones -	Platelayer -	59	Ditto at bank; died 5th Oct. -	–	–	–	–	1	1
„ 30	94	Brancepeth -	Willington -	Straker and Love -	William Broad -	Hewer -	20	Fall of stone - - -	–	1	–	–	–	1
Oct. 1	95	Eston - -	Middlesbro' -	Bolckow, Vaughan, & Co., Limited.	James Collard -	Miner -	32	Ditto - - - -	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives los					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total
1875.														
Oct. 4	96	Croxdale -	Durham -	Weardale Iron and Coal Co., Limited.	William Wood -	Sinker -	19	Explosion of firedamp - -	1	–	–	–	–	1
„ 5	97	Seaham -	Seaham -	Marquess of Londonderry	Michael Peart -	Shifter -	21	Fall of stone - -	–	1	–	–	–	1
„ 20	98	Burnhope -	Lanchester -	Fletcher and Sowerby -	George Gibbons -	Hewer -	38	Ditto - - - -	–	1	–	–	–	1
„ 20	99	Auckland Park	Bishop Auckland	Bolckow, Vaughan, & Co., Limited.	James McDonough	Pony putter	17	Ditto - - - -	–	1	–	–	–	1
„ 28	100	South Skelton	Guisbro' -	Thos. Vaughan & Co. -	John Ellis -	Driver -	—	Crushed by tub - - -	–	–	–	1	–	1
Nov. 2	101	Upleatham -	Marske -	J. W. Pease & Partners -	George Cook -	Ditto -	21	Ditto - - - -	–	–	–	1	–	1
„ 9	102	Chilton -	Ferry Hill -	Chilton Coal Co. -	Edward Lewis -	Hewer -	32	Fall of coal - - -	–	1	–	–	–	1
„ 10	103	West Stanley -	Chester-le-Street	J. H. Burn - -	Andrew Elliot -	Ditto -	19	Ditto - - -	–	1	–	–	–	1
Dec. 20	104	Eston - -	Middlesbro' -	Bolckow, Vaughan, & Co., Limited.	Job Burt - -	Incline man	61	Run over by waggons - -	–	–	–	1	–	1
								Total - -	1	48	13	29	14	105

List of the Fatal Accidents in Metalliferous Mines, and Loss of Life arising therefrom, in Mr. Bell's District, comprising South Durham, Westmoreland, and the North Riding of Yorkshire, during the Year 1875.

1875.														
Dec. 13	1	Whitfield Brow	Frosterley -	London Lead Co. - -	Joseph Dodds -	Miner -	29	Fall of stone while adjusting timber in mine.	–	1	–	–	–	1
								Total - -	–	1	–	–	–	1

LIST OF MINES classed under the COAL MINES REGULATION ACT, in MR. THOMAS BELL'S DISTRICT, 1875.

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
Atkinson, Thos., Hamsterley, viâ. Bishop Auckland.	Crane Row	Hamsterley	Coal (Landsale).
Bagnall & Co., Grosmont, York	Grosmont	Grosmont	Ironstone, Cleveland.
Bainbridge & Co., Tow Law, Darlington.	Elm Park	Tow Law	Coal.
Bainbridge, Trustees of Manor of.	Mossdale Gill	Wensleydale	Ditto (standing).
Barningham, Wm., Springfield, Darlington.	Aysdalegate	Guisbro'	Ironstone, Cleveland.
Bearpark-Brancepeth Coal Co., Limited, Bearpark Colliery, Durham.	Bearpark-Brancepeth	Durham	Coal and fire-clay.
Bell Bros., Limited, Middlesbro'-on-Tees.	Browney	Ditto	Ditto.
Ditto	Carlin House	Saltburn-by-the-Sea	Ironstone, Cleveland.
Ditto	Cliff	Ditto	Ditto.
Ditto	Huntcliffe	Ditto	Ditto.
Ditto	Normanby	Middlesbro'-on-Tees	Ditto.
Ditto	Page Bank	Willington, Durham	Coal and fire-clay.
Ditto	Skelton	Guisbro'	Ironstone, Cleveland.
Ditto	Skelton Park	Ditto	Ditto.
Ditto	Tursdale	Ferry Hill	Coal.
Blakey Iron Co., Pickering, York.	Blakey	Castleton	Ironstone.
Bolckow, Vaughan, & Co., Limited, Middlesbro'-on-Tees.	Auckland Park	Bishop Auckland	Coal.
Ditto	Binchester	Ditto	Ditto.
Ditto	Black Boy	Ditto	Ditto.
Ditto	Byers Green	Willington, Durham	Ditto and fire-clay.
Ditto	Challoner's	Guisbro'	Ironstone, Cleveland.
Ditto	Eston	Middlesbro'-on-Tees	Ditto.
Ditto	Hunwick	Willington, Durham	Coal and fire-clay.
Ditto	Leasingthorne	Bishop Auckland	Ditto ditto.
Ditto	Longacres	Saltburn-by-the-Sea	Ironstone, Cleveland.
Ditto	Newfield	Willington, Durham	Coal and fire-clay.
Ditto	North Skelton	Saltburn-by-the-Sea	Ironstone, Cleveland.
Ditto	Shildon Lodge	Bishop Auckland	Coal.
Ditto	Upsal	Guisbro'	Ironstone, Cleveland.
Ditto	West Auckland	Bishop Auckland	Coal.
Ditto	Westerton	Ditto	Ditto.
Ditto	White Lee	Crook, Darlington	Ditto and fire-clay.
Ditto	Woodifield	Ditto	Ditto ditto.
Briggs, G. E., Newgate Street, Bishop Auckland, Darlington.	Wakerfield	Staindrop	Ditto.
Brogden, John, Barras, Brough, Westmoreland.	Barras	Barras, near Brough	Ditto, Westmoreland, (standing).
Broomside Coal Co., Durham	Broomside	Durham	Ditto and fire-clay.
Brunton and Walker, Fryup, Lealholm, Yarm.	Poverty Hill	Castleton	Ditto, Yorkshire, (Landsale).
Burn, J. H., Newcastle-on-Tyne	West Stanley, Lamp	Chester-le-Street	Ditto and fire-clay.
Ditto	,, Kettledrum	Ditto	Ditto ditto.
Ditto	,, Fanny	Ditto	Ditto ditto.
Butterknowle Coal Co., Cockfield, Darlington.	Butterknowle	Cockfield	Ditto ditto.
Cain, John, Catterdale Fell Colliery, Hawes, Bedale.	Catterdale	Hawes	Ditto, Yorkshire, (Landsale).
Castle Eden Coal Co., Ferry Hill.	Castle Eden	Ferry Hill	Ditto.
Chapman and Merson, Crook, Darlington.	Crook	Crook	Ditto and fire-clay.
Charlton, T., & Co., Middlesbro'-on-Tees.	Charlton	Bishop Auckland	Ditto (sinking).
Ditto	Evenwood	Ditto	Ditto and fire-clay.
Ditto	Greenhead Beechburn	Crook	Ditto ditto.
Ditto	Ivesley	Ivesly	Ditto.
Ditto	Slapewath	Guisbro'	Ironstone, Cleveland.
Ditto	Storey Lodge	Bishop Auckland	Coal.
Ditto	Tees Hetton	Ditto	Ditto.
Chaytor, Henry, Witton Castle, by Darlington.	Carterthorne	Witton-le-Wear	Ditto.
Ditto	Ushaw Moor	Durham	Ditto.
Ditto	Witton Park	Witton-le-Wear	Ditto (standing).

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
Chilton Coal Co., Ferry Hill	Chilton	Ferry Hill	Coal.
Consett Iron Co., Limited, Blackhill, co. Durham.	Billingside Drift	Leadgate	Ditto.
Ditto	Blackhill Drift	Medomsley, Newcastle	Ditto.
Ditto	Brooms Drift	Leadgate	Ditto.
Ditto	Delves	Ditto	Ditto and fire-clay, (standing).
Ditto	Derwent	Medomsley, Newcastle	Ditto.
Ditto	Eden	Leadgate	Ditto.
Ditto	Eden Drift	Ditto	Ditto.
Ditto	Iveston	Ditto	Ditto.
Ditto	Langley Park	Witton Gilbert	Ditto.
Ditto	Medomsley	Medomsley, Newcastle	Ditto.
Ditto	Milkwell Burn	Ebchester, ditto	Ditto (standing).
Ditto	Westwood	Medomsley, ditto	Ditto.
Crawford, T., Littletown, Durham.	Elvet	Durham	Ditto (Landsale).
Coate Moor, Owners of Coate Moor Mine, Stokesley.	Coate Moor	Kildale	Ironstone, Cleveland, (standing).
Dormand and Parts., Lanchester, Durham.	Lanchester	Durham	Coal and fire-clay.
Dunsaney, Lord, and Parts., Pelton Colliery, Chester-le-Street.	Newfield	Chester-le-Street	Ditto.
Ditto	Pelton	Ditto	Ditto.
Durham, Earl of, Lambton Offices, Fence Houses.	Brasside	Durham	Ditto.
Ditto	Bourn Moor, D pit	Fence Houses	Ditto and fire-clay.
Ditto	„ Lady Ann	Ditto	Ditto.
Ditto	Cocken	Durham	Ditto.
Ditto	Harraton	Chester-le-Street	Ditto ditto.
Ditto	Herrington	Newbottle, Fence Houses	Ditto.
Ditto	Houghton	Fence Houses	Ditto.
Ditto	Lady Durham	Sherburn, Durham	Ditto.
Ditto	Littletown	Ditto	Ditto.
Ditto	Lumley, 2nd pit	Lumley, Fence Houses	Ditto.
Ditto	„ 6th pit	Ditto	Ditto.
Ditto	Newbottle, Margaret	Fence Houses	Ditto.
Ditto	„ Dorothea	Ditto	Ditto.
Ditto	Sherburn Hill	Sherburn, Durham	Ditto.
Ditto	„ House	Ditto	Ditto.
East Hetton Coal Co., Ferry Hill.	East Hetton	Coxhoe, Ferry Hill	Ditto ditto.
Elliot and Hunter, Quay, Newcastle-on-Tyne.	Charlaw	Durham	Ditto ditto.
Ditto	Kimblesworth	Ditto	Ditto.
Ditto	Nettlesworth	Ditto	Ditto.
Ditto	Sacriston	Ditto	Ditto.
Ditto	Witton	Ditto	Ditto.
Ferens and Love, Elvet Bridge, Durham.	Cornsay	Ditto	Ditto ditto.
Ditto	Inkerman	Tow Law	Ditto ditto.
Ferry Hill Coal Co., Limited, Ferry Hill.	Ferry Hill	Ferry Hill	Ditto.
Fletcher and Sowerby, Newcastle-on-Tyne.	Burnhope	Lanchester	Ditto.
Fryer & Co., Darlington	New Copley	Cockfield	Ditto.
Gjers & Co., Middlesbro'-on-Tees.	Spa	Guisbro'	Ironstone, Cleveland.
Graham, John, Little Strickland, near Penrith.	Newby	Newby	Coal, Westmoreland, (sinking).
Graham, John, Bishop Auckland.	Hilton Grange	Evenwood	Ditto (Lansdale).
Halliday, R., Esh, Durham	Hill Top	Esh, Durham	Ditto ditto.
Hansell, Robt., Rosedale Abbey, Pickering, York.	Lane Head	Rosedale	Ironstone (Cleveland).
Haswell, Shotton, & Easington Coal and Coke Co., Limited, Newcastle-on-Tyne.	Haswell	Fence Houses	Coal.
Ditto	Shotton	Castle Eden, Ferry Hill	Ditto.

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
Hedley Bros., Newcastle-on-Tyne.	Craghead	Chester-le-Street	Coal (standing).
Ditto	Holmside	Ditto	Ditto.
Hedley & Bell, Newcastle-on-Tyne.	Louisa	Ditto	Ditto.
Ditto	Morrison	Annfield Plain	Ditto.
Ditto	Charley	Ditto	Ditto.
Hedley, W. H., & Co., Norwood by Darlington.	Gordon House	Cockfield	Ditto.
Hetton Coal Co., Fence Houses	Elemore	Fence Houses	Ditto.
Ditto	Eppelton	Ditto	Ditto.
Ditto	Hetton	Ditto	Ditto.
Hogg, Walton, & Co., East Beechburn, Howden-le-Wear, Darlington.	East Beechburn	Howden	Ditto and fire-clay.
Hutchinson, Geo., & Co., Howden Colliery, Crook, Darlington.	Howden	Ditto	Ditto ditto.
Hutton Henry Coal Co., Limited, Darlington.	Hutton Henry	Wingate	Ditto (sinking).
Ditto	South Wingate	Ditto	Ditto (standing).
Iveston, Freeholders of, Iveston, co. Durham.	Saint Ives	Iveston	Ditto (Landsale).
Jackson, Christopher, 14, Russel Street, Darlington.	Cust Barn	Barnard Castle	Ditto ditto.
Johnson, Reay, and Johnson, Whitworth, Ferry Hill.	Hamsteels	Durham	Ditto and fire-clay.
Johnson, R. S., & Co., Whitworth, Ferry Hill.	Spennymoor (Martin)	Ferry Hill	Ditto.
Ditto	Whitworth Park	Ditto	Ditto.
Kilton Ironstone Co., Saltburn-by-the-Sea.	Kilton	Saltburn-by-the-Sea	Ironstone, Cleveland.
Knowles & Co., Swandale, Reeth, Richmond.	Tan Hill	Swandale	Coal, Yorkshire.
Lackenby Iron Co., Middlesbro'-on-Tees.	West Hunwick	Bishop Auckland	Ditto and fire-clay.
Liverton Iron Co., Limited, Saltburn-by-the-Sea.	Liverton	Saltburn-by-the-Sea	Ironstone, Cleveland.
Lishman, J., & Co., Claypath, Durham.	Crook Hall	Durham	Coal.
Lofthouse Iron Co., Limited, Saltburn-by-the-Sea.	North Lofthouse	Saltburn-by-the-Sea	Ironstone, Cleveland.
Londonderry, Marquess of, Seaham, Sunderland.	Adventure	Fence Houses	Coal.
Ditto	Alexandrina	Ditto	Ditto.
Ditto	Old Durham	Durham	Ditto.
Ditto	Rainton	Fence Houses	Ditto.
Ditto	Seaham	Sunderland	Ditto and fire-clay.
Ditto	Silksworth	Ditto	Ditto.
Love, J. H., & Part., Elvet Bridge, Durham.	Houghall	Durham	Ditto.
Ditto	Shincliffe	Ditto	Ditto ditto.
Love and Weir, Lanchester, Durham.	Browney Bank	Ditto	Ditto ditto.
Mainsforth Coal Co., Ferry Hill	Mainsforth	Ferry Hill	Ditto (sinking).
Mallestang Coal Co., Kirby Stephen, Westmoreland.	Mallestang	Kirby Stephen	Ditto, Westmoreland, (Landsale).
Marshall Green Coal Co., Witton-le-Wear, Darlington.	Marshall Green	Witton-le-Wear	Ditto and fire-clay.
Maw, James, Westerdale, Yarm	Rosedale Head	Westerdale	Ditto, Yorkshire, (Landsale).
Morrison & Co., Saltburn-by-the-Sea.	Brotton	Saltburn-by-the-Sea	Ironstone, Cleveland.
New Brancepeth Coal Co., St. John's Chambers, Newcastle-on-Tyne.	New Brancepeth	Durham	Coal and fire-clay.
North Beechburn Coal Co., Howden-le-Wear, Darlington.	North Beechburn	Darlington	Ditto ditto.
Ditto	Rough Lea	Willington	Ditto ditto.

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
North Brancepeth Coal Co., Limited, Bondgate, Darlington.	Boyne	Durham	Coal and fire-clay.
Ditto	Broom Park	Ditto	Ditto (standing).
Ditto	Littleburn	Ditto	Ditto.
Ditto	West Broom	Ditto	Ditto (standing).
North Hetton Coal Co., Fence Houses.	North Hetton	Fence Houses	Ditto.
Ditto	Hazard	Ditto	Ditto.
Ditto	Pittington	Ditto	Ditto.
North of England Industrial Iron & Coal Co., Limited, Middlesbro'-on-Tees.	Ailesbury	Stokesley	Ironstone, Cleveland.
Ditto	East Howle	Ferry Hill	Coal and fire-clay.
Norwood Coal Co., Norwood Colliery, Darlington.	Norwood	Evenwood	Ditto.
Original Hartlepool Collieries Co., Limited, Ferry Hill.	Ludworth	Thornley, Ferry Hill	Ditto.
Ditto	Thornley	Ditto	Ditto.
Ditto	Wheatley Hill	Ditto	Ditto.
Ord and Maddison, Darlington	Hummerbeck	West Auckland	Ditto.
Ditto	West Copley	Cockfield	Ditto.
Palmer's Ship-building and Iron Co., Limited, Newcastle-on-Tyne.	Grinkle	Port Mulgrave	Ironstone, Cleveland.
Ditto	Port Mulgrave	Ditto	Ditto ditto.
Pease, J. W., & Parts., Darlington.	Adelaide	Bishop Auckland	Coal.
Ditto	Arthur	Crook, Darlington	Ditto.
Ditto	Bowden Close	Willington	Ditto.
Ditto	Brandon	Crook, Darlington	Ditto.
Ditto	Cragg's Hall	Saltburn-by-the-Sea	Ironstone, Cleveland.
Ditto	Emma (Roddymoor)	Crook, Darlington	Coal and fire-clay.
Ditto	Esh	Durham	Ditto ditto.
Ditto	Job's Hill	Crook, Darlington	Ditto (standing).
Ditto	Lingdale	Saltburn-by-the-Sea	Ironstone, Cleveland, (sinking).
Ditto	Lofthouse	Ditto	Ditto.
Ditto	Lucy (No. Roddymoor)	Crook, Darlington	Coal and fire-clay.
Ditto	Tocketts	Saltburn-by-the-Sea	Ironstone, Cleveland.
Ditto	Saint Helens	Bishop Auckland	Coal and fire-clay.
Ditto	Stanley	Crook, Darlington	Ditto.
Ditto	Sunniside	Ditto	Ditto.
Ditto	Tindale	Bishop Auckland	Ditto.
Ditto	Upleatham	Marske-by-the-Sea	Ironstone, Cleveland.
Ditto	Windlestone	Ferry Hill	Coal (sinking).
Ditto	Wooley	Crook, Darlington	Ditto.
Pears, G., & Co., Witton-le-Wear, Darlington.	Middle Bitchburn	Howden, Darlington	Ditto and fire-clay.
Pringle & Co., Newcastle-on-Tyne.	Findon Hill	Durham	Ditto ditto (standing).
Ditto	Whitehouse	Witton Gilbert, Durham	Ditto ditto (ditto).
Robson, Edward, & Co., Middlesbro'-on-Tees.	Kirkleatham	Redcar	Ironstone, Cleveland.
Withes, Geo., Bickley, Kent	Cassop	Ferry Hill	Coal.
Ditto	Stanghow	Guisbro'	Ironstone, Cleveland.
Rosedale and Ferry Hill Iron Co., Limited, Newcastle-on-Tyne.	Coxhoe	Ferry Hill	Coal.
Ditto	Rosedale, East	Pickering, Yorks.	Ironstone, Cleveland.
Ditto	,, West	Ditto	Ditto.
Ditto	,, Sheriff's Pit	Ditto	Ditto.
Ditto	Thrislington	Ferry Hill	Coal.
Ryhope Coal Co., Limited, Sunderland.	Ryhope	Sunderland	Ditto.
Sharp, John, Low Beechburn, Crook, Darlington.	Low Beechburn	Crook, Darlington	Ditto and fire-clay.
Shildon Coal Co., Shildon, Darlington.	Shildon	Darlington	Ditto.
Smith and Sons, Langley Mill, Durham.	Langley	Durham	Ditto (standing).

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
Snowdon, Windle, & Co., Grosmont, York.	Eskdaleside	Grosmont	Ironstone, Cleveland, (standing).
South Durham Coal Co., Bishop Auckland.	Eldon	Bishop Auckland	Coal.
Ditto	South Durham	Ditto	Ditto.
South Hetton Coal Co., Limited, Fence Houses.	Murton	Fence Houses	Ditto.
Ditto	South Hetton	Ditto	Ditto.
South Cleveland Ironworks Co., Limited, Glaisdale, Yarm.	Esk Valley	Esk Valley, Grosmont	Ironstone, Cleveland, (standing).
Ditto	Glaisdale	Glaisdale, ditto	Ditto (abandoned).
Spence, C. J., Staindrop, Darlington.	Morley Main	Etherley	Coal (Landsale.)
Stobart, Hy., & Co., Witton-le-Wear, Darlington.	Etherley	Ditto	Ditto and fire-clay.
Ditto	Lands	Cockfield	Ditto.
Ditto	Newton Cap	Bishop Auckland	Ditto.
Ditto	Railey Fell	Evenwood	Ditto.
Stevenson, Jacques, & Co., Middlesbro'-on-Tees.	Boosbeck	Guisbro'	Ironstone, Cleveland.
Ditto	Dryburn Grange	Durham	Coal and fire-clay.
Ditto	Framwellgate	Ditto	Ditto ditto.
Straker and Love, Newcastle-on-Tyne.	Brancepeth	Willington, Durham	Ditto ditto.
Ditto	Brandon	Ditto	Ditto ditto.
Ditto	Oakenshaw	Ditto	Ditto ditto.
Ditto	Willington	Ditto	Ditto ditto.
Summerson, R., & Co., Cockfield, Darlington.	Vane's Hartley	Cockfield	Ditto.
Swan, Coates, & Co., Middlesbro'-on-Tees.	Ormesby	Middlesbro'	Ironstone, Cleveland.
Ditto	Whitecliffe	Saltburn-by-the-Sea	Ditto.
Teasdale, Jos., Cleatlam, Winston, viâ Darlington.	Osmond Croft	Winston, Darlington	Coal (Landsale).
Teasdale, R., & Parts., Spennymoor.	Rock	Spennymoor	Ditto (sinking).
Thiedemann and Wallis, Newcastle-on-Tyne.	Byron	Chester-le-Street	Ditto.
Ditto	Chester South Moor	Ditto	Ditto.
Ditto	Waldridge	Ditto	Ditto.
Thompson, Jno., & Parts., Leeside, near Bolam, co. Durham.	Copperside	Cockfield, Darlington	Ditto (Landsale).
Tregelles, E. O., Derwent Hill, Shotley Bridge.	Medomsley Edge	Medomsley, Newcastle	Ditto.
Trimdon Coal Co., Limited, Trimdon, Ferry Hill.	Deaf Hill	Ferry Hill	Ditto (standing).
Ditto	Trimdon	Ditto	Ditto.
Trimdon Grange Coal Co., Ferry Hill.	Trimdon Grange	Ditto	Ditto and fire-clay.
Tyzack, S., & Co., Sunderland	Edmondsley	Chester-le-Street	Ditto.
Vaughan, T., & Co., Middlesbro'-on-Tees.	East Hedley Hope	Tow Law, Darlington	Ditto.
Ditto	Hedley Hope	Ditto	Ditto.
Ditto	South Skelton	Saltburn-by-the-Sea	Ironstone, Cleveland.
Ditto	Tindale	Bishop Auckland	Coal.
Ditto	Woodhouse-close	Ditto	Ditto.
Victoria Coal Co., Witton-le-Wear, Darlington.	Witton-le-Wear	Darlington	Ditto and fire-clay, (standing).
Veitch & Co., Coundon, Bishop Auckland.	Coundon	Bishop Auckland	Ditto (Landsale), (standing).
Wear Coal Co., Belmont Hall, Durham.	Kepier	Durham	Ditto (sinking).
Weardale Iron & Coal Co., Limited, Tudhoe, Ferry Hill.	Belmont	Guisbro'	Ironstone, Cleveland.
Ditto	Bishop Middleham	Ferry Hill	Coal.
Ditto	Bishop's Close	Ditto	Ditto.
Ditto	Black Prince	Tow Law, Darlington	Ditto and fire-clay.
Ditto	Hedley Hill	Ditto	Ditto.
Ditto	Middridge	Shildon, Darlington	Ditto.
Ditto	Old Thornley	Tow Law, Darlington	Ditto ditto (standing).

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
Weardale Iron & Coal Co., Limited, Tudhoe, Ferry Hill.	South Belmont -	Guisbro' - -	Ironstone, Cleveland.
Ditto - - -	Spa Wood - -	Ditto - -	Ditto.
Ditto - - -	Croxdale - -	Durham - - -	Coal (sinking).
Ditto - - -	Tow Law - -	Tow Law, Darlington -	Ditto.
Ditto - - -	Tudhoe - -	Tudhoe, Ferry Hill -	Ditto and fire-clay.
Ditto - - -	Tudhoe Grange -	Ferry Hill - -	Ditto.
Ditto - - -	West Thornley -	Tow Law, Darlington -	Ditto.
Walker, Simpson, & Co., Cockfield, Darlington.	North End - -	Cockfield - - -	Ditto.
Walton, Thomas, Brough, Kirby Stephen, Westmoreland.	Borrowdale - -	Brough - - -	Ditto, Westmoreland, (Landsale).
West Beechburn Coal Co., Tow Law, Darlington.	West Beechburn -	Tow Law, Darlington -	Ditto.
Whitwell Coal Co., Durham -	Whitwell - -	Durham - - -	Ditto.
Wild, J. G., & Co., Ferry Hill -	Thinford Grange -	Ferry Hill - -	Ditto (standing).
Wingate Grange Coal Co., Ferry Hill.	Wingate Grange -	Ditto - -	Ditto.
Witton Fire-brick, &c. Co., Darlington.	Witton-le-Wear -	Darlington - -	Ditto and fire-clay.
Wolsingham Park, Dinas, and Fire-brick Mineral Co., Limited, Newcastle-on-Tyne.	Wolsingham Park -	Wolsingham, Darlington -	Ditto, fire-clay, ganister, &c. (standing).
Wooler, Chapman, & Co., Crook, Darlington.	Cold Knot - -	Crook, Darlington - -	Ditto ditto.
Ditto - - -	Hargill - -	Ditto - -	Ditto ditto.
Woodlands Coal Co., Darlington	Crake Scarr - -	Cockfield - -	Ditto.
Ditto - - -	Woodlands - -	Ditto - -	Ditto.

LIST OF MINES classed under the METALLIFEROUS MINES REGULATION ACT, in MR. THOMAS BELL'S DISTRICT, 1875.

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Remarks.
	CUMBERLAND.		
Robinson, J. H., 25 Westgate Road, Newcastle-on-Tyne.	Tees Side	Alston Moor	Lead.
	DURHAM.		
Beaumont, W. B., Allenheads, Northumberland.	Burtree Pasture	Weardale	Ditto.
Ditto	Craig's Level	Ditto	Ditto.
Ditto	Green Laws	Ditto	Ditto.
Ditto	Killhope	Ditto	Ditto.
Ditto	Rookhope	Ditto	Ditto.
Ditto	Slitt	Ditto	Ditto.
Ditto	Stanhope Burn	Ditto	Ditto.
Byers, Joshua, Grass Hill Mine, Harwood, Middleton-in-Teesdale.	Grass Hill	Harwood Middleton	Ditto.
Clark and Oxley, Wilson Building's, Low Spennymoor.	Hett	Hett, Durham	Whinstone.
Collinson, George and Joseph, Middleton-in-Teesdale.	East and West Pike Law.	Middleton-in-Teesdale	Lead.
Derwent Mining Co., Limited, Blanchland, Riding Mill.	Jeffries	Blanchland	Ditto.
Ditto	East Whiteheaps	Ditto	Ditto (standing).
Ditto	Nookton	Ditto	Ditto (ditto).
Dubby Syke Mining Co., Limited, 25, Westgate Road, Newcastle-on-Tyne.	Dubby Syke	Harwood Fell	Ditto.
Gibbon, John, South Street, Spennymoor.	Tudhoe Whinstone	Tudhoe	Whinstone.
Green Hurth Mining Co., Limited, 25, Westgate Road, Newcastle-on-Tyne.	Green Hurth	Greenhurth Fell, Harwood	Lead.
Harehope Gill Mining Co., Blackhill, Durham.	Harehope Gill	Edmondbyers	Ditto.
Harwood Mining Co., Limited, 25, Westgate Road, Newcastle-on-Tyne.	Harwood	Harwood, Middleton-in-Teesdale.	Ditto.
Healey Field Mining Co., Healey Field, Castleside, Blackhill.	Healey Field	Healey Field	Ditto.
Hexham and Edmondbyers Lead Mining Co., Limited, Blackhill, Durham.	Edmondbyers	Swandale	Ditto.
London Lead Co., Middleton-in-Teesdale.	Ashgill Head	Middleton-in-Teesdale	Ditto.
Ditto	Bollyhope Burn	Frosterley	Ditto.
Ditto	Coldberry	Middleton-in-Teesdale	Ditto.
Ditto	Coldberry Skeers	Ditto	Ditto.
Ditto	Cornish Hush	Frosterley	Ditto.
Ditto	East Rake	Middleton-in-Teesdale	Ditto.
Ditto	Flakebrigg	Frosterley	Ditto.
Ditto	High Dyke	Middleton-in-Teesdale	Ditto.
Ditto	High Skeers	Ditto	Ditto.
Ditto	Little Eggleshope	Ditto	Ditto.
Ditto	Lodge Syke	Ditto	Ditto.
Ditto	Red Groves	Ditto	Ditto.
Ditto	Shambury	Ditto	Ditto.
Ditto	Snaisgill	Ditto	Ditto.
Ditto	Whitfield Brow	Frosterley	Ditto.
Ditto	Wiregill	Middleton-in-Teesdale	Ditto.
Robinson, J. H., 25, Westgate Road, Newcastle-on-Tyne.	Isabella	Harwood Fell	Ditto.
Ditto	Langdon	Langdon Beck	Ditto.
Ditto	Martha	Harwood Fell	Ditto.
Rookhope Valley Mining Co., Limited, Rookhope.	Stotsfield Burn	Rookhope	Ditto.

List of Mines classed under the Metalliferous Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.,	Name of Mine.	Where situated.	Remarks.
		DURHAM—*continued.*	
Teesdale Mining Co., Limited, 25, Westgate Road, Newcastle-on-Tyne.	Teesdale	Harwood, Middleton-in-Teesdale.	Barytes.
Upper Teesdale Mining Co., 25, Westgate Road, Newcastle-on-Tyne.	Upper Teesdale	Ditto	Lead.
Walton, J. P., & Co., Willy Hole Mine, Harwood, Middleton-in-Teesdale.	Willy Hole	Ditto	Ditto.
Wolsingham Lead Co., Wolsingham, Darlington.	Sunnyside	Wolsingham	Ditto.
		NORTHUMBERLAND.	
Beaumont, W. B., Allenheads, Northumberland.	Allenheads	Allendale	Ditto.
Ditto	Coal Cleugh	Ditto	Ditto.
Derwent Mining Co., Blanchland, Riding Mill.	Shildon	Riding Mill	Ditto (standing).
		WESTMORELAND.	
Greenside Mining Co., Patterdale, Penrith.	Greenside	Patterdale	Ditto.
London Lead Co., Middleton-in-Teesdale.	Dufton Fell	Appleby	Ditto.
Ditto	Hardshins	Ditto	Ditto.
Ditto	Hilton	Ditto	Ditto.
Ditto	Hunter's Vein	Ditto	Ditto.
Ditto	Lodgegill	Ditto	Ditto.
Ditto	Mallerstang	Ditto	Ditto.
Ditto	Murton	Ditto	Ditto.
Ditto	Silverband	Ditto	Ditto.
Nether Hearth Lead Mining Co., Limited, Dufton, nr. Alston.	Nether Hearth	Dufton	Ditto (standing).
Pease, Henry, Stanhope Castle	Clouds	Kirby Stephen	Ditto.
Ditto	Hartley Birkett	Ditto	Ditto.
		YORKSHIRE.	
A.D. Lead Mining Co., Limited, Reeth, Richmond.	Surrender	Swaledale	Ditto.
Ditto	Swinneigill	Ditto	Ditto.
Apedale Lead Mining Co., Redmire, Bedale.	Apedale	Bedale	Ditto.
Arkendale Mining Co., Arkengarthdale.	Arkendale	Richmond	Ditto.
Bowman, John H., & Son, Wet Groves Mine, Askrigg, Bedale.	Wet Groves	Askrigg	Ditto.
Fell End Mining Co., Reeth, Richmond.	Fell End	Swaledale, Reeth	Ditto.
Hurst Mining Co., Swaledale, Reeth, Richmond.	Hurst	Ditto	Ditto.
Kirby, Thos., & Co., Keld Head Mines, Wensleydale, Leyburn.	Keld Head	Wensleydale	Ditto.
London Lead Co., Middleton-in-Teesdale.	Baldersdale	Lunedale	Ditto.
Ditto	Lune Head	Ditto	Ditto.
Ditto	West Silverband	Ditto	Ditto.

List of Mines classed under the Metalliferous Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Remarks.
	YORKSHIRE—*continued.*		
Merrybent Mining Co., Melsonby, Barton station, Darlington.	Merrybent	Melsonby	Lead (standing).
Old Gang Mining Co., Swaledale, Richmond.	Old Gang	Swaledale, Reeth	Ditto.
Pease, Henry, Sargill Mine, Hawes, Bedale.	Sargill	Hawes	Ditto.
Robinson, G. A., & Co.	Ellerton Moor	Reeth	Ditto.
Ditto	Grinton Moor	Ditto	Ditto.
Scholefield, George, Egmont, Grosmont, York.	Egmont Whinstone	Grosmont	Whinstone.
Sillery, Mrs. Eleanor, Beldi Hill Mines, Swaledale, Richmond.	Beldi Hill	Swaledale	Lead (standing).
Waddington, G. W., 20, St. Hilda Terrace, Whitby.	Grosmont Whinstone	Grosmont	Whinstone.
Whitaside Mining Co., Grinton, Reeth, Richmond.	Whitaside	Whitaside	Lead (standing).
Worton Mining Co., Bainbridge, Bedale.	Worton	Worton	Ditto.
	IRON ORE MINES.		
	DURHAM.		
Weardale Iron and Coal Co., Limited, Tudhoe, Ferry Hill.	Level Gate	Weardale	Ironstone.
Ditto	North Grane	Ditto	Ditto (standing).
Ditto	North Groove Rake	Ditto	Ditto ditto.
Ditto	Red Vein	Ditto	Ditto.
Ditto	Rowan Tree A.	Ditto	Ditto.
Ditto	Rowan Tree B.	Ditto	Ditto ditto.
Ditto	Slitt Pasture	Ditto	Ditto.
Ditto	South Groove Rake	Ditto	Ditto ditto.
Ditto	West Slitt	Ditto	Ditto.
	WESTMORELAND.		
Lake District Hæmatite Mining Co., Limited, Grasmere.	Fairfield	Grasmere	Iron Ore.
Muse, Straughton, Ashton, & Co., Grasmere.	Providence Iron Ore	Seat Sandle, Grasmere	Ditto.
	SLATE MINES.		
	WESTMORELAND.		
Field, Thos., Bangor Road, Leith	Kentmere	Staveley	Slate.
Green, J. & D. F., Elterwater Green Slateworks, Windermere.	Elterwater	Langdale	Ditto.
Hodgson, P., & Co., Elterwater, Ambleside.	Banks	Ditto	Ditto.
Patterdale Slate Co., Lowther, Patterdale.	Cawdle	Patterdale	Ditto.
Stables, Isaac, Chapel Stile, Elterwater, Ambleside.	Thrang Cragg	Langdale	Ditto.
Stables, John, Chapel Stile, Elterwater, Ambleside.	Thrang Cragg	Ditto	Ditto.
Tyson, Wm., Elterwater, Ambleside	Scott, Copy, & Lord's Quarry.	Ditto	Ditto.

Mr. Dickinson's Report.

REPORT on the INSPECTION of MINES in the DISTRICT comprising NORTH and EAST LANCASHIRE under the Coal Mines Regulation Act, 1872; and within the Coal Field of NORTH and EAST LANCASHIRE, and in CHESHIRE, and SUSSEX, under the Metalliferous Mines Regulation Act, 1872, with Amending Act of 1875; also IRELAND under both Acts; for the Year 1875.—BY JOSEPH DICKINSON, Esq., F.G.S.

SIR, Pendleton, Manchester, 30th March 1876.

I HAVE again the honour to report to you upon the working of the Mining Acts in this district.

For convenience of reference, and to save repetition, matter which relates to the district generally will be found in this introductory part of the Report.

Matters relating to specific portions of the district are given under the respective headings.

Particulars relating to examinations for colliery managers follow. Concluding with detailed lists of the mines and accidents.

According to the Returns made to me for the year 1875, the number of persons employed in and about the mines of this district consists of:—

North and East Lancashire, Coal Mines - - - -	33,006
Ditto Metalliferous mines within the coal field -	238
Cheshire, Metalliferous Mines - - - - -	397
Sussex, Ditto - - - - - -	8
Ireland, Coal Mines, 1,544, Metalliferous Mines, 2,626 - - -	4,170
Total -	37,819

Aided by Mr. Martin, Assistant Inspector, the ordinary routine work of the district has been attended to. Every intimation of danger or irregularity, and all accidents appearing to require it, have been investigated. Other mines besides those where accidents had happened have been visited, with the view of ascertaining that the regulations were being complied with. A large number of old pits have also been looked to respecting the required fencing.

Numerous deficiencies have been met with, but not more than might reasonably be expected in such complicated work and at this early period under the new Acts.

Accidents.

The accidents, generally, have been kept in check, and on the whole there seems an increasing desire to comply with the regulations. The miners might, with advantage, avail themselves much more than they do of the power of inspecting the mine on their own behalf. But on the other hand, they now more frequently send confidential intimations of danger, and in this way certainly some accidents are being avoided.

The important principle of the Acts that contraventions on the part of others unless checked creep up to those acting in the management is, in particular, becoming more understood and acted upon. Kind measures seem generally to be tried first, and only when these fail is law resorted to.

Penalties.

The following are the instances which have come under my notice where legal proceedings have been taken by the masters.

At Chorley, Lancashire, a collier for counselling and procuring his drawer, a boy under

16 years of age, to get coal during the colliers absence, fined ten shillings and costs. At Little Bolton, Bolton, a collier for resuming holing underneath the coal without resetting sprags or stays after the coal had not fallen from the effects of a shot, twenty shillings and costs. At Leigh, a collier for refusing to leave the cage in the shaft when ordered to do so by the banksman, there being more than the notified number of persons therein at the time, ten shillings and costs. At Manchester, a collier for taking powder in a loose state instead of in cartridges into a mine where firedamp had been met with during the preceding three months, twenty shillings and costs. Also at Manchester, two firemen for not replacing a danger signal at the entrance to an old working containing chokedamp, twenty shillings each and costs. At Little Bolton, for unramming shots which had missed fire, two miners at the beginning of the year, and a third recently, were sent to prison for one month. A lad, which came under my own observation, for in his folly coming up the pit standing on the ledge of a loose tub, hung by two chains, with his arms spread out instead of holding on, had the option of fine or dismissal.

It may seem hard to punish persons thus, chiefly, for not taking care of themselves. Imprisonment particularly seems severe and possibly demoralizing. But it is to be hoped that by reforming some and deterring others the means justify the end.

In the following instances proceedings, with your sanction, have had to be taken by me against persons acting in the management.

At Little Bolton, a manager for not sending notice of an explosion of powder attended with personal injury, one pound and costs. At Oldham, the owner of Barrowshaw Colliery for not causing a competent person to report as to the state of the working places and levels, five pounds and costs. At the same time and place, proceedings were taken against the underlooker and fireman for not keeping bore holes in advance, on the occasion of an inundation, but the evidence did not satisfy the magistrates that dangerous water was anticipated. At Chorley, Lancashire, the manager of Duxbury Colliery for not providing adequate ventilation, ten pounds and costs; and for not appointing a competent person to examine and lock safety lamps, ten pounds and costs; at the same time and place, the underlooker for not withdrawing the miners on dangerous firedamp appearing, two pounds and costs; and for permitting open lights on approaching firedamp, two pounds and costs. At Little Bolton, in a case of disputed liability to fence some old pits at Unity Brook, the former occupier and not the landlord was fined, but on appeal to the divisional court the conviction was quashed, on the ground that his occupation had ceased. The pits, however, were fenced immediately on commencement of the legal proceedings, but not until then. At Castlecomer, in Ireland, the owner of the crop colliery at Skehana, for not keeping bore holes on the occasion of an inundation, six pounds and costs; and at the same time and place, costs to the underlooker for not on his part attending to the required boring.

The six pounds imposed at Castlecomer was by your direction paid over to the widows of the two miners who lost their lives in the inundation. Twenty-five pounds was also paid to each widow by the owner of the mine as a solatium.

The other penalties have been notified to the Receiver of Government Fines, in order that they may be paid into Her Majesty's Exchequer to be carried to the Consolidated Fund.

Fiery Mines.

Ordinarily where gas is accumulated in dangerous proximity in any mine, or whilst in a very fiery mine gas pent up in the strata is getting vent, managers do not attempt to use powder. In those cases where, notwithstanding adequate ventilation, an emission or blower of gas is so strong as to fire or show a blue flame in the safety lamp when held to it, the Act for three months afterwards prohibits powder from being used whilst the ordinary work persons are in that panel of the mine. The shots also may only be fired by a competent person appointed for the purpose. The Act also prohibits this person from firing any shot unless it be safe to do so. It is just possible under such circumstances that for a brief time shots when unsafe might be fired by this "competent person," but under a proper manager it is scarcely probable that such a state of things could continue long without coming to his knowledge, and consequently of the responsibility devolving upon him, and successively upon the agent and the owner, if any, above him. During a depressed state of the coal trade, such as the present collapse following the inflation of 1872–3, restrictions of this kind which interfere with the economical getting of coal are apt to be contravened. In this district four such instances have come under observation in time, and been stopped, where powder was being fired contrary to the Act. In each instance gas either was or had been within three months issuing at blowers so as to fire in the safety lamp notwithstanding the ventilation

and in one of the instances the issue became so strong that under the clause of being unsafe the use of powder had to be entirely discontinued. Instances have also been met with during the year, and stopped, where open lights were being used in dangerous proximity to firedamp. Such things are not creditable to the managers. Still with these checks the year has been got through with 19 flashes of gas injuring 27 persons, and but one fatal explosion attended with the loss of two lives, which is unusually favourable for the Lancashire portion of this district.

Much discussion arising out of explosions elsewhere has lately taken place on the subject of blasting in coal mines. It is well known that within the last quarter of a century the use of powder for working hard coal and ground has largely increased, and that much laborious work has been saved by it. Doubtless some accidents have happened directly from its use. It has also indirectly from improper use been in some instances the means of lighting firedamp. In some of these latter instances instead of fixing the occurrences upon the primary causes, inadequate ventilation, accumulated firedamp, lax discipline, or want of precaution, the mere lighting of the gas has apparently been too much laid hold of. Something serious with respect to explosions was foreboded to the coal committee in the heyday of 1873. But it fell upon unwilling ears. Had it been more heeded some of what is happening might have been averted still, without in any way extenuating what deserves reprehension, panic should not prevail in passing through the collapse. It may therefore, when the entire disuse of powder is being talked of, be useful to look round and see how things really stand throughout the kingdom. The ratio of fatal explosions to the numbers of persons employed in and about mines has greatly diminished and is still diminishing. It is the ratio of deaths which for the time being is less favourable. During the first 10 years in the inspection of mines ending 1860, there was throughout Great Britain one fatal explosion of firedamp to every 3,000 persons employed. In the second decade ending 1870, the fatal explosions were so far diminished as to be only one to the very much larger number of 5,650 persons. The improvement has continued. In 1873, when fire-clay, shale, &c. mines were also comprised, the explosions were only one to the still larger number of 11,641 persons. In 1874, still improving, one in 12,246. And in 1875, better still, one in 13,069. Now, with respect to deaths, there is a retrogression in 1874–5, but it is still comparatively favourable. During the first decade ending 1860, the ratio was one death by explosion to every 1,008 persons employed. In the second decade one in 1,408. In 1873 it was one to the very much larger number of 5,122. During the commencement of the collapse in 1874 it was one in 3,245. And during 1875 it is still one in 1860 persons, being nearly twice as favourable as in the first decade. In 1851, the first year of the inspection, it was actually one in 673, or about three times the present ratio.

The decline of accidents and deaths from all causes which has accompanied the inspection is also manifest. By falls of roof and sides of workings the ratio is only about one half of what it was during the first decade ending 1860. In shafts it is only about one third. The miscellaneous heading, which has contributed to safety in other ways, being about stationary. In the aggregate during the first decade ending 1860, the ratio by accidents of all kinds was one in every 318 persons employed. In the second decade ending 1870, one in every 388. In 1873, when fire-clay, shale, &c. mines also were comprised, it was one to the very much larger number of 526. And in 1874, when Ireland was also comprised, it was one in 602. In 1875 it is still one in 578. In deaths the aggregate is similarly favourable. During the first decade the ratio was one in every 245 persons employed. In the second decade one in 300. In 1873, when fire-clay and shale mines were also comprised, it was one in 479, and in 1874, when Ireland also was comprised, it was one in 510. It is now, in the collapse of 1875, one in 430, which is still nearly twice as favourable as in first decade after the commencement of the inspection. The ratio under each heading for the 20 years after the commencement of the inspection was shown in a tabular statement prepared by me for Mr. Secretary Bruce (Lord Aberdare) in 1871, and printed by order of the House of Commons, 12th April 1872.

The following is a summary of the table, with an addition bringing it up to 1874, which is well worthy of careful study.

Coal Mines Act.

Table showing the number of fatal accidents and deaths with the ratio to persons employed in Great Britain and Ireland since the commencement of the inspection. Note, after 1872 fire-clay, ironstone, and shale mines are comprised, and after 1873 Ireland is included.

	Accidents causing one or more Deaths.						Persons employed.	Ratio of Persons to each Accident.					
	Fire-damp explosions.	Roof and sides falling.	Shaft.	Miscellaneous underground.	Miscellaneous above ground.	Total.	Above ground and below ground.	Firedamp explosions.	Roof and Sides falling.	Shaft.	Miscellaneous underground.	Miscellaneous above ground.	Total.
	ACCIDENTS.												
Average of 10 years ending 1860	82·0	361·1	183·7	100·3	46·8	773·9	246,032·2	3,000	681	1,339	2,453	5,257	318
„ 1870	56·5	403·1	133·3	156·1	73·8	822·8	319,240·5	5,650	792	2,394	2,045	4,326	388
Year 1871	52	426	118	161	69	826	370,881	7,132	870	3,143	2,303	5,375	448
„ 1872	62	445	131	179	77	894	418,088	6,743	939	3,191	2,335	5,429	468
„ 1873	44	474	158	211	86	973	512,199	11,641	1,080	3,242	2,427	5,955	526
„ 1874	44	403	145	200	103	895	538,829	12,246	1,337	3,716	2,694	5,231	602
„ 1875	41	440	153	196	97	927	535,845	13,069	1,217	3,502	2,733	5,524	578
	DEATHS.												
Average of 10 years ending 1860	244·1	376·7	211·9	118·6	50·5	1001·8	246,032·2	1,008	653	1,161	2,074	4,872	245
„ 1870	226·7	416·3	150·5	191·6	77·5	1062·6	319,240·5	1,408	767	2,121	1,666	4,119	300
Year 1871	269	435	123	176	72	1,075	370,881	1,378	852	3,015	2,107	5,151	345
„ 1872	154	456	155	217	78	1,060	418,088	2,714	916	2,697	1,926	5,360	394
„ 1873	100	491	171	221	86	1,069	512,199	5,122	1,043	2,995	2,317	5,955	479
„ 1874	166	413	154	214	109	1,056	538,829	3,245	1,304	3,498	2,517	4,943	510
„ 1875	288	459	172	227	98	1,244	535,845	1,860	1,167	3,115	2,360	5,467	430

Ladders.

In metalliferous mines, generally, ladders are the principal means of descent and ascent for the miners. In the deep copper and sulphur mines of Ireland, with but one exception, where a man-engine is occasionally used, ladders are the means of ingress and egress. Men's muscles get accustomed to it. But the excessive labour spent in climbing is a serious waste of the most valuable physical power. A man cannot daily lower and raise the weight of his own body, it may be more than 1,200 feet, without the effect of that exertion being an important item in his day's work. It is seldom done in coal mines. Persons there are usually lowered and raised by machinery: and if the distance be far to the working places below ground, they are usually conveyed by train. The winding arrangements, shafts, and roadways for this purpose have, of course, to be kept in proper order, which costs money. But where metalliferous mines are deep and the miners numerous the cost of keeping ladder pits and the waste of time in climbing will probably cost more. By machinery the miners arrive fresh at their work and with little loss of time. The managers, who have to think and observe as well as work, would also more cheerfully face the bottom levels if relieved of the ladder drudgery. It would also give them more favourable opportunities of seeing that regulations were carried out, and of watching the indications needful for finding deposits of ore. In order to meet foreign competition, mines of this class require now to have every resource utilized, and apparently the waste of time in climbing is deserving of more consideration than it receives.

Ventilation.

Proper ventilation is also a very important element in the successful working of all mines. The ventilation of metalliferous mines, although greatly improved of late years, is not yet all that should be desired. Drivings are made too far in advance without keeping air up to the face of the working. The seldomness of finding firedamp in these mines may be the principal reason why the perception of managers has not been more quickened in this respect. But chokedamp prevails, and there is powder smoke, and also the products of combustion of candles, exhalations, and such like, all wanting fresh air to clear them away. To get rid of these noxious effects, openings for air should be made at shorter distances, or the air be kept up to the face by some of the well known artificial means, such as bratticing. And when requisite ventilating power should be applied. As it is there is too often such impurity in the far ends that a candle will not burn freely when set straight up, and spittle and mucous become darkened after one has been in the place for a time. Such an atmosphere is slow poison. Indeed the margin between it and sudden danger is small. When a candle goes out it is a plain warning that a man would not last long. If the impurity be strong enough he is struck down in an instant. The injurious proportion (as stated in my Annual Report for 1865, when I obtained the services of Dr. R. Angus Smith, the chemical inspector on the point,)

is so small that only one part of carbonic acid in 400 parts of air is sufficient to make a workshop be considered close. When there is from one part of carbonic acid present in from 40 to 50 parts of air candles are extinguished. It is not known exactly how much will suffocate a man, but from experiments it appears that few people could bear one part of carbonic acid in 25 parts of air long, and it is believed that it would be rapidly fatal to some. During the past year this subject has been brought under the notice of a large number of those acting in the management of the matalliferous mines of this district, but more especially as regards the iron ore mines of county Antrim. Duty and economy alike call for improvement in this respect. The Act requires adequate ventilation in all the working places, and a man cannot endure long to do full work unless that be provided.

Rock-salt mines.

In my report on the "salt districts landslips," (printed by order of the House of Commons, 6th May 1873,) numerous details are given relating to rock-salt mines, as well as brine. On the subject of the proportion requisite to be left in pillars for support of the superincumbent strata, it is shown that at Northwich, Cheshire, where a thickness of from six to eight yards of rock-salt is being worked at a depth of about 110 yards, the pillars are usually 10 yards square and 25 yards apart. They are not left in straight lines, like squares on a draught board, but promiscuously, so that there is one pillar $10 \times 10 = 100$ square yards to each area, including what is excavated, of about $35 \times 35 = 1{,}225$ square yards. The proportion of pillar at this depth consequently forms 1 in $12\frac{1}{4}$. Or in other words for each $11\frac{1}{4}$ parts worked out one part is left for support, which is usually found to be sufficient at that depth. At Winsford, Cheshire, where six yards of the bed of salt is being worked at a depth of 159 yards, the pillars for the same areas are now being left 12 yards square.

In Ireland the rock-salt mines in county Antrim are under the care of managers from Cheshire. In one mine, where a thickness of 10 yards of rock-salt is being worked at a depth of 220 yards from the surface, the pillars are about 16×12 yards at the bottom, but being tapered are only about 12×8 at the top.

In the other mine, where a thickness of fully 13 yards of rock-salt is being worked at a depth of 295 yards (which is the greatest depth of any rock-salt mine in the United Kingdom), the pillars at the bottom are 14×12 yards, but being tapered are only 12×10 yards at the top. Irrespective, therefore, of the greater thickness of the excavation, and consequently greater height of the pillars, the size of the pillars in the Irish mines is much smaller that what in Cheshire is found requisite in proportion to the thickness of superincumbent strata. The thickness of rock-salt left to form the roof of the excavation in the Irish mines is also less than in Cheshire. Under these circumstances the attention of the managers has been called to the subject with the view of either larger pillars or more of them being left.

Brine pits.

Pits from which brine is pumped for the manufacture of salt are not considered to come within the Mining Acts. But in obtaining the returns of rock-salt I have at the request of the Salt Chamber of Commerce also received returns of the salt made from brine, with the view of enabling the chamber to obtain correct statistics. The solution of rock-salt and consequent sinking of the surface over the brine runs is still occasioning great destruction of property and submergence of land both at Northwich and Winsford.

Weighing.

At those mines under the Coal Mines Act where only few miners are employed, or the tubs in which the mineral is sent out are small, or where exigencies exist, or the men prefer being paid by the number of tubs, exemption from the weighing provision is continued. When the circumstances are such as to admit of weighing, but the views of the majority of the men are undecided, the ballot has in this district proved an effectual test. In two instances in which it has been tried the results showed a majority in favour of weighing. Check weighers or check measures, as may be, are appointed at some of the collieries and they appear to work harmoniously. The inspectors of weights and measures, it appears from a question which arose, act under the magistrates and are entitled to fees when called in. The fees go to benefit the county.

Fund.

The portion of the surplus Hartley Fund sent to this mining district remains in the Manchester Branch of the National Provincial Bank of England. The sum sent May 21st 1864 was 1,587*l.* 12*s.* 11*d.* It now, with interest, amounts to 2,185*l.* 13*s.* 3*d.*, nothing has been drawn out.

NORTH AND EAST LANCASHIRE.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT.

According to the Returns made to me for the year 1875 the average number of persons employed in and about these mines was 33,006, and the quantity of mineral wrought 8,968,606 tons.

Returns.

Of the persons 27,305 were below ground and 5,701 above ground. Of those below ground 210 were boys between 10 and 12 years of age in thin seams, that is in seams not exceeding 3 feet in thickness, 864 between 12 and 13; 3,174 between 13 and 16; and 23,057 above 16. Of those above ground, between 10 and 13, males 142; females, none; 13 to 16, males, 252; females, 34; above 16, females, 108; males, 5,165. Altogether there is an increase of 139 below ground and 39 above ground as compared with the preceding year. The increase below ground is altogether amongst those above 16 years, and it has to cover a decrease of 226 which is still continuing amongst those under 16. The surface workers are an increase of 39, and it has to cover a diminution of 6 in the females.

The mineral consists of coal, 8,881,137 tons; fire-clay, 83,351; ironstone, none; alum shale, 3,995; copperas lumps, 123. This is a total increase of 754,909 tons compared with the preceding year, being an increase under every head except ironstone. The average production in 1875 was 271 tons per person employed in and about the mines, which is about the ordinary average for these mines. The annual production per person employed commencing with the year 1865 has been respectively 268, 266, 255, 267, 268, 268, 290, 326, 254, 247, 271 tons.

Fatal Accidents.

The fatal accidents under the Coal Mines Act in North and East Lancashire during the year 1875 number 63, and the deaths 75. Amongst the deaths is included one from an accident which happened within a year and a day in the previous year. Numerically the whole is a decline of 5 in accidents, but the deaths are precisely the same as in the previous year. The ratio of casualties to the number of persons employed in 1875 is 1 fatal accident amongst every 524, and 1 death amongst every 440. Comparing these results with those of past times it appears that great improvement is being effected. In 1851 the persons employed in and about the collieries of this district numbered only 18,249. In 1861 they were increased to 23,525. They now, in 1875 (including 142 women on the surface), number 33,006. With the former numbers during the first decade, according to the detailed tabular statement appended, the accidents averaged $63\frac{3}{10}$ annually, or only the fraction more than at present with nearly twice the number of persons employed. The former average of deaths was 90, or 15 more than at present. The result is therefore tantamount to a large diminution both in accidents and deaths.

The 63 fatal accidents with 75 deaths at the coal mines of North and East Lancashire are detailed in the list at the end. They consist of:—

1 by explosion of firedamp with 2 deaths.
33 by falls of roof and sides of workings with 38 deaths.
10 by shaft accidents with 11 deaths.
16 by miscellaneous underground with 21 deaths.
3 by miscellaneous above ground with 3 deaths.

The explosion of firedamp causing 2 deaths was in the Mill Pit, Duxbury Colliery. It arose from inadequate ventilation, and allowing men to go near where there was gas, some of them having safety lamps and some candles, for which the manager and the underlooker were each heavily fined. The lighting of the gas occurred from its being wafted to one of the candles by the movement of a tub.

The 33 accidents with 38 deaths, from falls of roof and sides of workings, were all from falls of roof except four. The sufferers were nearly all experienced miners, none being under 18 years of age. The accidents happened as follows:—Four with six deaths at Messrs. T. Fletcher and Sons, respectively; one at Outwood with two deaths when a pack wall was being built to support the roof; one other at Outwood; and one again behind a pack wall whilst he was endeavouring to escape; also one at Bradley fold with two deaths whilst widening a road and walling one side; four at Mr. Hulton's collieries, respectively; two in the School Pit Yard Mine; one in the Arley, and one at a slip in the Thirteen Three Quarters Pit; four at Messrs. A. Knowles and Sons, Ld., respectively, two in Pendle-

bury, one in Clifton Hall, and one in Agecroft; three with five deaths at the Bridgewater Collieries, respectively, one in Linnyshaw and two in Coppice Field, in one of which three lives were lost; two at Towneley in Messrs. Brooks and Pickup's Collieries, one being when taking out props in the King Mine, and one whilst widening a road in the Arley; two at Messrs. George Hargreaves and Co.'s Baxenden Collieries, one being at Moleside whilst renewing timbering, and one in Victoria Pit where pillars of coal were being got; two at Messrs. Fletcher, Burrows, and Co.'s, one in Lovers Lane by coal which was being taken down, and one in the Crumbouke by coal rolling over the sprags. All the others were single accidents with one death in each. At Waterside from between two slips; Lordsfield from the high side of a level; Anderton Hall; Wharton, in taking out a sprag; Scowcroft's Kersley, Aspen, Turton Moor, Stand Lane, Bradford (Manchester), whilst getting stone in old workings; Bugle Horn, whilst holing; Duxbury, Lee (Bacup), by grit rock roof; Stonehill, the death occurring within a year and a day from a fall of roof in the previous year.

The 10 fatal shaft accidents with the loss of 11 lives under the respective headings were: *Overwinding*, none. *Ropes and chains breaking*, one of a rope by which a scaffold was suspended in a shaft at Towneley. *Whilst ascending or descending by machinery*, three; with a loss of four lives, respectively, one at Rivin Pit with a loss of two lives by cages coming in collision where wire rope guides were used; one at Hunt Clough sinking shaft, where a sinker was drawn against the banking waggon, which (as the coupling chain and part of the rope below the pulley were not heavy enough, and it being supposed from mistaking the signal that the rope was coming up empty,) had been put over the pit in order that the rope might be steadied; one at Bradford (Manchester), by a crush in attempting to get into the cage after the signal to go on had been given. *Persons falling into shaft from surface*, none. *Things falling from the surface*, one at Wharton Hall, the bottom cager struck by a piece of coal from a tub that was being taken out of the other cage at the top. *Persons falling from part way down*, at Mosley Common, to a person who by jumping from a scaffold into a bucket jerked the arms of a hand capstan over the struts. *Things falling from part way down*, one at Rose Hill, Bolton, to a sinker by stone from the side below the bricking; one at Tithebarn, Over Darwen, to a cager at the bottom by a piece of coal from an ascending tub. *Miscellaneous in shafts*, one at Lovers Lane, Atherton, by falling into the cage race above the sump, it being without fence or moveable cover; one at Towneley, by the slipping of a rope through the clams as it was being repaired.

The 16 fatal miscellaneous accidents underground, with loss of 21 lives, were: *Eplosions of gunpowder*, one at Mr. Scowcroft's Kersley, in a sinking shaft, by a shot, which had missed fire, going off as it was being wrongfully unrammed by the sinker; one at Stand Lane, Radcliffe, to the manager (Mr. John Haslam), and a sinker, by a shot fired in a sinking shaft blowing the rock through into a stone drift in another pit where they were standing, the signal not having been heard and repeated back as arranged. *Suffocation by gases*, one with death to the fireman and assistant fireman at Martholme Colliery, Great Harwood, by venturing too far in advance of the air whilst they were dislodging strong fire-damp at night; one at Moston, Manchester, by venturing into an old working, which was being unwatered, where he knew there was blackdamp, but at the entrance to which the fence had been knocked down by a run of tubs on the incline, (for not replacing which two firemen were fined); one at the ventilating furnace, Outwood Colliery, at night, by fumes from a part of the mine which was afterwards found to be on fire. *Irruptions of water*, one with the loss of four lives in Barrowshaw Colliery, Oldham, by approaching old workings without boring. Proceedings were taken against the owner, the manager, and the under-looker for contravention of the rule as to boring, but the likelihood of dangerous water not being proved to the satisfaction of the justices, the former only was fined for not keeping the daily report as to the state of the workings, to which his attention had been previously drawn. *Falling into water*, none. *On inclined planes*, four, one at Bradford Colliery, Manchester, by a crush against a coupling timber as he was wrongfully riding up the engine brow on a full tub; another at the same colliery by the breakage of a coupling link which allowed some tubs to run back; one at Manor Colliery, Kersley, in trying to get on to a train of tubs while they were in motion; at Pendleton Colliery by the breakage of a jig brow rope allowing a tub to run against him at the bottom. *By trams and tubs*, three, one at Clifton Hall Colliery by a train of tubs being drawn upon him by a pony as he was assisting to unload timber; one at Agecroft Colliery by a passing train of tubs which caught and drove some other tubs upon him; at Bridgewater Colliery, by his tub in taking it down a slope. *By machinery underground*, two, one at Ashton's Field Colliery by the arm of a gin as he was letting a tub down a brow without the horse; one at Scoutmoor Colliery, drawn against a pulley by an endless rope. *Sundries underground*, one at Scot Lane Colliery, by a coupling timber which he was taking out falling on him.

The three fatal miscellaneous accidents on the surface, were: *by machinery*, none; *boilers bursting*, none; *miscellaneous*, three. One at Bower Colliery, Hollinwood, a carter falling off the pit bank whilst assisting the banksman to tip part only of a tub of coal into a cart. One at the timber yard of the Little Lever Collieries, a sawyer cut by a circular saw. One at Top Pit, Denton, a plate-layer crushed by a railway waggon against the wall of the pit bank, the bank not being high enough to admit of long shoots with space for breaking between the wall and the waggons.

SUMMARY of fatal Accidents and Deaths annually in the Coal Mines of North and East Lancashire.

Year.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
Separate Accidents - -	60	60	73	78	73	52	60	55	53	67
Deaths - - -	113	82	87	89	84	99	138	68	58	82

Year.	10 Years Average.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	10 Years Average.	1872.	1873.	1874.	1875.
Separate Accidents.	63·3	56	60	60	61	58	71	61	74	66	61	62·8	78	69	68	63
Deaths -	90·0	59	68	64	66	69	84	65	76	86	61	69·8	116	74	75	75

Non-fatal Accidents.

The accidents attended with personal injury by explosions, all of which have to be reported, number 19 by firedamp, two by powder, and one by a steam boiler.

Of those by firedamp, the injuries happened in three instances when safety lamps were being used. One of these was at a defective lamp, as a fireman was fixing brattice to dislodge gas. The second was with a cartridge in firing a shot a second time in the same hole; the first firing had not brought down the coal, but having, as now appears, made some unseen breaks behind, which became filled with gas, it caused the flame from the shot to extend about a dozen yards, which was farther than the shot-firer expected. The third was a succession of flashes of gas when endeavouring to extinguish a standing fire, close at the back of which was a large body of firedamp; the firedamp was being kept as pure as possible, in order that it might not have air enough to be explosive, but the air which was required for persons in front brought the gas there to the explosive point, and it lighted at the fire. The other non-fatal explosions happened where open lights were allowed for working with,—four being where persons after an absence returned to their places without re-examining with a safety lamp; four of gas lying in cavities in the roof; three of gas coming off from the strata suddenly, with falls of roof; one a flash in a cutting; one on cutting through into old workings; one a flash whilst keying an arch; one in arranging the brattice after firing a shot; one by a blower lighting at a candle. In these explosions the persons burned were 15 miners, 2 waggoners, 1 archer, 1 metal man, 7 firemen, and 1 owner—27 in all. The dates on which they happened were January 20, 28, February 27, March 22, April 6, May 2, 17, 31, June 15, July 14, 20, August 4, 21, 26, 28, November 2, 5, 8, 24.

The non-fatal gunpowder explosions were: one injuring two persons by a shot, when, as they said, the wadding was being put in with a wooden stemmer; and the other by a flash of powder at the person's open light.

The non-fatal steam boiler explosion, by which two persons were slightly hurt, was apparently from over pressure.

Non-fatal accidents from causes other than explosions having only to be reported when attended with serious personal injury makes the return of this class unreliable. Those reported consist of 86 by falls of roof and sides, 13 shaft accidents, 30 miscellaneous underground, and 20 miscellaneous above ground.

WITHIN THE COALFIELD OF NORTH AND EAST LANCASHIRE, AND IN CHESHIRE AND SUSSEX.

Mines classed under the Metalliferous Mines Regulation Acts.

The Returns show that at the Metalliferous Mines in this portion of the district, the number of persons employed in 1875 were:

Within the coalfield of North and East Lancashire	238
Cheshire	397
Sussex	8
Total	643

Lancashire.

Metalliferous mines within the coalfield of North and East Lancashire:—These mines consist of one limestone mine at Ardwick, Manchester, and 13 flag, slate, and freestone mines, situated at Over Darwen, Whitworth, and in Rossendale.

The persons employed were 129 below ground, all of whom were men, and 109 above ground. Of the latter, two were males from 8 to 13 years of age; eight ditto, 13 to 18 years; and 99 ditto, above 18 years. The quantity of limestone produced was 3,884 tons. The quantity of flag, &c., is not accurately known, but is computed at 48,000 tons. Injury to one person, a banksman at Sough, Over Darwen, was reported. It happened on the surface, in lifting a stone.

Cheshire.

The mines of Cheshire, exclusive of coal mines, consist of 10 rock-salt mines in work at Northwich, and one at Winsford; also one copper mine at Alderley Edge. Of the 397 persons employed 333 were underground, and 64 above ground. Of those underground nine were between 12 and 13 years of age, 35 from 13 to 18 years, and 289 above 18. Of those above ground, two were males, age 8 to 13, five ditto 13 to 18, seven females above 18, and 50 males ditto.

The mining produce of these mines in 1875 was 158,044 tons of rock salt, and 122 tons of copper precipitate. This does not include salt made from brine, which, according to information supplied to me at the request of the Salt Chamber of Commerce, amounted in 1875 to 1,779,000 tons, including Worcestershire and Staffordshire.

The copper ore at Alderley Edge is found in new red sandstone. It lies in flats or bedded masses at the side of veins, where the sandstone is impregnated with about $1\frac{1}{4}$ per cent. of copper. During the three years ending 1874, 6,248, 8,128, and 8,184 tons of ore yielded respectively 109, 142, and 126 tons of copper precipitate. The precipitate when dried contains about 70 per cent. of copper.

No loss of life was reported. But at Wincham Rock-Salt Mine, a person hooking on a the bottom of the shaft, in which there are two winding ropes, was struck by a piece of rock-salt falling from the other bucket at the top of the shaft; and at the copper mine a miner was hurt by a shot which had missed fire going off as he was wrongfully unramming it.

Sussex.

In Sussex one mine is now on the lists. It is an exploration for gypsum, at Mountfield, about three miles from Battle, in close proximity to the Sub-Wealden borehole. On the average eight persons have been employed at the mine; three being miners, and five men above ground. No gypsum of any importance has been sent away, nor has any personal injury been reported.

Limestone has been worked for many years by means of shallow mines. Most, if not all, of these are now closed, and the shafts filled up.

IRELAND.

Mines classed under the Coal and Metalliferous Mines Acts.

Matter which applies to the district generally will be found in the introductory portion of this Report. The lists of mines, detailed list of accidents, and particulars relating to examinations for colliery managers are at the end.

The following statistics and details relate solely to Ireland.

Returns.

The total number of mines in Ireland during the year 1875 average 43 under the Coal Mines Act, and 58 under the Metalliferous Mines Act. According to the Official Returns which have been sent to me under the Acts, the average number of persons employed in and about these mines of both kinds during the year was 4,170. Of these 1,544 were at the coal mines, and 2,626 at the Metalliferous Mines. At the whole of the mines of this inspection district, with which Ireland is associated, 37,819 persons are employed. Numerically, therefore, in proportion to persons employed, the mines of Ireland constitute about one-ninth part of the district.

Coal Mines.

The Returns show that of the 1,544 persons under the Coal Mines Act in Ireland, 1,069 were employed below ground, and 475 above ground. Of those below ground, four were between 12 and 13 years of age, 48 between 13 and 16 years, and 1,017 above 16 years. Of those above ground, 21 were males of 13 and under 16, the others being six females and 448 males above 16 years. The Act precludes making known the details relating to separate owners, unless consented to; but as the Mining Company of Ireland, who are the only producers of coal in Munster, courteously consent, the number employed in the respective provinces may each be given. They were 84 in Connaught, 866 in Leinster, 333 in Munster, and 261 in Ulster.

The quantity of mineral returned under the Coal Mines Act, amounts to,—coal, 128,201 tons; fire-clay, 6,760 tons; blackband ironstone, 300 tons. The produce of coal in the respective provinces was,—Connaught, 4,772 tons; Leinster, 66,876 tons; Munster, 40,684; Ulster, 15,869. All the fire-clay and ironstone was produced in Ulster.

Compared with the preceding year there is a diminution of 107 persons, and a decrease of 11,012 tons of coal, and 1,449 tons of fire-clay. The ironstone is an addition.

The average produce of coal, fire-clay, and blackband ironstone is 87 tons per person. It was 89 in the preceding year, and 71 in the year before that. These proportions are small compared with what is being done elsewhere. The principal cause of this appears to be that most of the Irish collieries are very small, and the seams very thin. In the Lancashire portion of the district, the average is 271 tons per person; but most of the Lancashire seams are thicker, and more machinery is applied in the transit below ground. Indeed, within one mile of my residence, at a colliery where the seams dip at an inclination of about 1 in 3, and part of the mine is about 800 yards in perpendicular depth from the surface, one pair of ropes wind from a depth of 526 yards as much coal as the whole produce of the Irish collieries. The colliery work of Ireland generally requires to be more concentrated, and in the Leinster coalfield, and the Tipperary portion of the Munster, also the Tyrone portion of the Ulster, the want of railway accommodation appears to be a great drawback.

Return under the Coal Mines Act of persons employed in Ireland during the years 1873–4–5:

	1873.	1874.	1875.
Underground: Boys of 10 and under 12 years of age	4	—	—
„ 12 „ 13 „	6	1	4
Male young persons of 13 and under 16	77	61	48
Males above 16	1,122	1,058	1,017
Total underground	1,209	1,120	1,069
Above ground: Boys of 10 and under 13	5	1	—
Girls ditto	—	—	—
Male young persons of 13 and under 16	43	24	21
Female ditto	—	—	—
Women above 16	1	2	6
Males ditto	692	504	448
Total above ground	741	531	475
Total underground and above ground	1,950	1,651	1,544

Return under the Coal Mines Act of the Quantities of Mineral produced in Ireland in 1873–4, and 5:

	1873.	1874.	1875.
	Tons.	Tons.	Tons.
Coal, Connaught (Leitrim, Roscommon, and Sligo)	11,021	5,108	4,772
„ Leinster (Kilkenny and Queen's)	61,425	72,302	66,876
„ Munster (Cork and Tipperary)	45,180	43,993	40,684
„ Ulster (Antrim and Tyrone)	18,105	17,810	15,869
Total Coal	135,731	139,213	128,201
Fire-clay, Ulster (co. Tyrone)	3,702	8,209	6,760
Ironstone (blackband), Ulster (Antrim)	—	—	300
Total Mineral	139,433	147,422	135,261

Metalliferous Mines.

The Returns of persons employed in and about the mines under the Metalliferous Mines Act in Ireland amount to 2,626. Of these 1,565 were employed below ground, and 1,061 above ground. In these numbers are included 65 at the rock-salt mines in county Antrim. Also those employed at the slate and slab mines of Valentia and Clonwilliam. But not those at the slate quarries of Killaloe and Victoria, nor those at the numerous other quarries of limestone, sandstone, &c., which are not comprised by the Acts. The total number employed at the mines is at present declining, owing chiefly to the depression in the iron trade, and the competition of foreign copper and sulphur ores. The respective numbers since the commencement of the Returns under the inspection are:

		1872.	1873.	1874.	1875.
Underground:	Boys of 12 and under 13	2	3	6	2
	Male young persons of 13 and under 16	45	81	91	73
	Males persons above 16	1,800	1,771	1,587	1,490
	Total underground	1,847	1,855	1,684	1,565
Above ground:	Boys of 8 and under 13	47	53	30	30
	Girls ditto	21	18	7	3
	Male young persons of 13 and under 16	248	284	207	172
	Female ditto	94	113	103	96
	Women above 18	105	109	70	76
	Males ditto	850	891	846	684
	Total above ground	1,365	1,468	1,263	1,061
	Total underground and above ground	3,212	3,323	2,947	2,626

Of those employed in 1875, 14 were in Connaught, 689 in Leinster, 1,273 in Munster, and 650 in Ulster.

The Returns of Mining Produce in Ireland under the Metalliferous Mines Act since the commencement of the inspection amount to:

	1872.	1873.	1874.	1875.
	Tons.	Tons.	Tons.	Tons.
Barytes	1,706	3,736	1,506	3,656
Copper Ore	8,778	8,793	7,559	5,015
Do. Precipitate	41	60½	48½	48
Gold	Stone.	Stone.	6½ oz.	8 oz.
Iron Ore	108,092	127,132	139,846	109,800
Iron Pyrites	43,940	37,738	25,941	15,831
Lead Ore	964	1,211	1,750	1,855
Lignite	1,000	1,310	150	20
Lithomarge (flux)	8,675	6,685	1,250	3,373
Ochre	—	—	—	5
Rock Salt	32,941	33,751	27,951	33,075
Slate and Slab	Unknown.	Unknown.	Unknown.	794
Steatite	250	100	100	151
Zinc, Blende	—	3	1	—
Do. Calamine	1,731	855	—	—

The quantity of copper ore in 1875 is exclusive of 693 tons dressed at the beginning of the year, but which, before the passing of the amending Act as to the returns, was included in the return for 1874. The quantity of iron ore includes a little worked opencast. The quantity of slate and slate slab is exclusive of that from the Killaloe and Victoria quarries, and of the limestone, freestone, &c., worked opencast.

Coal Mine Accidents.

The fatal accidents reported to me from the coal mines of Ireland during the year 1875 are three with four deaths. January 16th, at Cloneen Colliery, Crettyard, Queen's County, Mr. William Shea, owner, a boy named William Shea, waggoner, 14 years of age, by part of the roof falling in the mine.

May 20th, at Skehana Colliery, Castlecomer, county Kilkenny, Mr. Henry Close and Mrs. Eliza Bradley, owners, Michael Granger and William Tynan, coal miners, by an inundation of water from old workings.

November 26th, at Brackavill, Coal-island, county Tyrone, B. M'Callan and Co., owners, Peter Carran, coal miner, by roof falling in his heading.

On investigating the accident at Cloneen Colliery, it appeared that the coal miner with whom the deceased boy worked had not carefully looked to the roof of the place as he ought to have done.

At Skehana Colliery, the required boring in advance and on each side of the working approaching the dead water was not being attended to. Legal proceedings were accordingly taken by me with your sanction against the owner, and at the petty sessions at Castlecomer a penalty of six pounds and costs was imposed upon the owner. This penalty, upon my recommendation, was by your direction divided between the widows of the deceased. An action at law was also being instituted by the widows against the owner for compensation, but was, it appears, arranged by the payment of 25*l.* to each as a solatium.

At Brackavill the miner had a bad roof to deal with, and he inadvertently omitted to secure it with sufficient props.

The non-fatal coal mine accidents in Ireland reported during the year 1875 comprise two by explosions of powder, four in shafts, and one above ground.

One of those by powder was at Monteen, Castlecomer, by a shot, which had missed fire, going off as the person was wrongfully unramming it. The other was at Clogh Colliery, Castlecomer, by the person dropping his candle on the powder in charging a shot.

The four persons seriously injured in shafts, were, first, at Earlshill, Slievardagh, county Tipperary, by falling 45 feet in a ladder pit, he having lost his light; second, at Hollypark, Crettyard, Queen's County, by falling out of a bucket in ascending the shaft; third, in a sinking pit at Curran, Dungannon, by a piece of steel coming off a wedge as it was being struck; fourth, by stone falling in an exploring shaft at Killycruise, Queen's County.

The serious personal injury above ground was at Skehana Colliery, Mr. Shortell's, Castlecomer, to a person who stepped on machinery connected with the winding drum.

Metalliferous Mine Accidents.

The fatal accidents reported from the Metalliferous Mines of Ireland during the year 1875 are six accidents, with the loss of one life in each. Three of them took place at the Berehaven Mines, county Cork; first, a smith by the breakage of a wire rope as the person was being wound up the mountain mine shaft; second, a trammer caught by machinery at Doneen mine dressing floors, apparently as he was greasing wheels; third, a shaftman, by the failure of a screw, as he and others were lifting about three tons weight of pumps. One, a miner at Tigroney, county Wicklow, by sulphur ore which he was taking down from the back of a working falling on him. One, a miner at Newtown-Crommelin Iron Ore Mine, county Antrim, by the roof of his working place falling on him. One, a labourer at Clonwilliam Slate Mine, by falling into an old quarry at the entrance to the mine.

Another fatal accident happened, but it scarcely comes within the Act. At Ruplagh Lead Mine, Luganure, county Wicklow, a boy two and half years of age, not connected with the mine, got drawn against a pulley by a wire rope, which he had caught hold of whilst playing.

The non-fatal accidents reported from the metalliferous mines of Ireland in 1875 are five, with injury to six persons. Three of these were from the incautious use of powder; the first at Evishnably Iron Ore Mine, county Antrim, to two miners, by a shot going off as they were putting down the first part of the stemming upon a wisp of hay which they had used as wadding; second, at Ballycummisk Copper Mine, county Cork, to a miner, by the powder exploding as he was charging a hole; third, at Knockmahon Mine, county Waterford, to a

miner, who returned too soon thinking his shot had missed fire. At Glenarm Iron Ore Mine, county Antrim, to a breaksman, in taking a waggon to the depôt. At Foxrock Lead Mine, Luganure, county Wicklow, to a miner, by a stone which he was taking down falling on him.

Metalliferous Mines— Old Pits.

Old pits under the Coal Mines Act have all to be kept securely fenced. The same also applies almost identically under the Metalliferous Mines Act, but with a limitation as to certain of those previously existing. When the Acts came into operation in Ireland attention had to be called to a large number under both Acts, most of which ought to have been fenced without notice.

The following is a list of the old pits under the Metalliferous Mines Act, some of which ought to have been fenced without notice, but with respect to all of which that were found dangerous notice has now been given requiring them to be kept securely fenced.

In counties Kerry and Cork.

Clontough, Dr. Adrian Tayler, Clontough, Kenmare, six old shafts situated for the most part in woods or shubberies about four miles from Kenmare, and all of them beyond Mr. Tayler's house when going from Kenmare.

Shanagarry or Caher, Lord Lansdowne, (John Townsend Trench, Land Agent,) two old shafts about 25 yards apart, a dwelling-house being within about 25 yards of each of them. They are about three miles from Kenmare on the left-hand side.

Ardtully, Wm. Sadler, Tredegar Place, Bow Road, London, two old shafts near Clontough, about four miles east of Kenmare, on the left-hand side of the road.

Bulaslough, Dr. James Notter, (Richard W. Doherty, Solicitor, Bandon, Agent,) one shaft within about 50 yards on the left-hand side of the road from Goleen to Schull, and close to Goleen Village.

Roaring Water, George Long, (Richard Gillman, Sandy Cove, Kinsale, Agent,) two old shafts, Water Bay, near Denis Driscoll's house, at the side of the road leading to Roaring Water Bay. A third shaft, about 100 yards from the others is on the hill behind Mr. Long' house, and close to some bushes.

Spanish Cove, of which Isaac Notter, of Crookhaven is lessee, (Mrs. Thos. D. Notter, lessor,) two old shafts about half-way between the village of Goleen and the Black Island Coastguard Station.

Dhurode, north of Crookhaven, Beecher Lionel Fleming, New Court, Skibbereen, seven or eight old shafts.

Crookhaven Old Mines, Lord Charles Pelham Clinton, (Messrs. Thos. R. Wright and Son, Solicitors, Clonakilty, Agent,) three old shafts near Mr. Notter's house beyond the village of Crookhaven, and about opposite to the Black Island Coastguard Station. One of the shafts is close to the old engine-house. The other two are about 100 yards south of the engine-house.

Ballydehob Old Mine, (Joseph Driscoll, Schull, Agent,) on the land occupied by Mr. John Driscoll, between the old chapel and the village, two old shafts and three holes.

Horse Island Mine, on Horse Island, south of Ballydehob, recently worked by the Horse Island Mining Company, one shaft on the western end of the island, and another near the eastern end.

Cappagh Mine, Ballydehob, Arthur O. S. Cave, Cappagh Lodge, Ballydehob, two old shafts east of the engine shaft, in uninclosed land, and within about 50 yards of a roadway. Also three shafts about 250 yards north of the engine shaft, and about 100 yards from the road; also one in the lawn between the Manor House and the sea. The shafts within the yard or inclosure round the engine shaft, &c., were fenced.

Mount Gabriel Old Mine, near Ballydehob, Henry E. Nickles, Skibbereen, an old shaft near the old buildings; also two or three old mouthings of inclined planes.

Glandore Mines, about three miles east of Skibbereen, R. C. Forster, 22, Cockspur Street, Charing Cross, London, one shaft between the road and the drift mouth, and about six others on the hill, in Captain Barry's property, (Wm. Norwood, of Ballyhalwick, Dunmanway, Agent.)

County Clare.

Kilbrickie Mine, parish of Doora, about three miles S.E. of Ennis, Colonel Armstrong McDonald, New Hall, Ennis.

Ballyhickie Mine, Hugh Singleton, Hazlewood, found full of water and not more exposed than a pond.

Milltown Mine, Tulla, worked as a quarry at the entrance, which, with the shaft is now filled with water.

Ballyvergin Mine, Brown Wyndham Brady, New Grove, Tulla; (John Brady, Receiver, Albert Place, Limerick.)

COUNTY TIPPERARY.

Reafadda Gin Pit Mine, and Hollyford engine shaft were found fenced. But the shaft in a field between them was unfenced, (Wm. Aldred, 28, Pall Mall, Manchester, Liquidator.)

COUNTY LEITRIM.

Iron ore exploration, north side of railway between Dromod and Drumsna, found fenced.

COUNTIES MONAGHAN AND ARMAGH.

Craggan Mines, near Crossmaglen, Castleblayney, Mrs. Biggar, (E. Courtenay, 43, Dame Street, Dublin, Agent.)

COUNTY ANTRIM.

Kilwaughter iron ore shaft, near Larne. The Earl of Antrim.

Coroners.

On the 26th December 1873, a circular letter was issued by the Irish Government from Dublin Castle to all coroners in Ireland forwarding copies of inclosures sent from the Home Office on the preceding 24th November, and requesting that in the discharge of their duties they would be careful to comply with the provisions of the "Coal Mines Regulation Act, 1872," and the "Metalliferous Mines Regulation Act, 1872," as set forth and explained in those inclosures. The ordinary duties and powers of coroners in Ireland are, it appears, regulated by the Act 9 and 10 Vict., Cap 37., Sections 22 and following. The 44th section provides for an inquest being held by two magistrates in certain cases. Under these regulations the holding of inquests in the investigation of deaths from mining accidents seems, generally, to be working well. It is proper, however, to state that at certain mines situated in a remote part of one county the practise has been to hold no inquest at all. The cause of this was that the distance there and back being over 140 miles, and having to be done by car, it cost more in time and money than the allowance for fees and mileage. The coroner, however, on his attention being called to the importance of the subject, has now resumed or commenced the holding of such inquests. When the Mining Acts were being passed no notice was taken by the coroners either in England or Ireland of the additional duties imposed upon them without compensation. Some of them now point out that the writing of the required notices, payment of postage or telegrams, the occasional forwarding of depositions, and the necessity of occasionally adjourning an inquest entitles them to consideration. Coroners who held office at the passing of these Acts certainly appear to have a fair claim in this respect, and in the event of the question coming under the notice of the authorities some arrangement might also be made with respect to the exceptional case above named.

COLLIERY MANAGERS.

NORTH AND EAST LANCASHIRE AND IRELAND.

The number of candidates for a certificate of competency as a colliery manager under the Coal Mines Act at the examination in December last was 47. Of these 31 belonged to the district and 16 were externs, 21 passed. This is an improvement compared with the previous year when before the same examiners only 4 out of 16 were successful.

The conditions laid down by the board for this district enjoin that a candidate must be 21 years of age. He must have had 3 years experience in or about a colliery or mine, and he must be able to read and write. The subject fixed for examination is the knowledge necessary for the practical working of collieries and other mines under the Act in the North and East Lancashire or Manchester district, including all the provisions of the Coal Mines Regulation Act, 1872; and a practical treatise on the gases met with in coal mines and the general principles of ventilation by the late J. J. Atkinson, Esquire, published by A. Reid, Printing Court Buildings, Akenside Hill, Newcastle-on-Tyne. The examinations are held in December every year. Candidates desiring the authorization from the Secretary of State to appear before the examiners should apply to Maskell Wm. Peace, Esquire, of Wigan, Secretary to the Board.

In order that candidates may not be taken unawares, they should, in addition to having practical knowledge, make themselves thoroughly acquainted with the Coal Mines Act and the

special rules of the district. Also with the information contained in the treatise named, even with the meaning of technical words, in case they may be referred to as a test of intelligence. The questions are varied at each examination. But to give candidates an idea of the nature of what will be required the following copy of questions which have been put by the examiners is supplied.

JUNE 1873.

1. *Shafts.*

1. Describe the operation of sinking and securing a shaft through a surface of quicksand 10 yards in depth.
2. What description of conductors is used in shafts?
3. What is the approximate weight of a round hempen rope 250 yards in length, and 8 inches in circumference?
4. By what number of short chains ought a circular cradle or flying scaffold to be attached to the bottom end of a capstan rope?
5. Describe the process of laying a metal curb to support a column of metal tubbing.
6. Describe the process of putting in metal tubbing.
7. How would you send metal tubbing down a shaft?

2. *Ventilation.*

8. What is firedamp, and by what other names is it called?
9. What is atmospheric air?
10. What is carbonic acid, and by what other names is it called?
11. What are approximately the relative weights of each, that of air being 1?
12. When is firedamp most explosive; and should it continue to burn in the lamp after drawing down the wick, how would you act?
13. Describe the Stephenson, the Clanny, and the Davy lamp, and say which you consider the safest, and why.
14. What means are in use to produce ventilation in mines?
15. Ventilate the workings shown by the accompanying plan, without using any air doors, except those shown; the drawing roads are distinguished by dotted lines.

3. *Workings.*

16. What is meant by "long work"? Show this by a sketch.
17. What is meant by "pillar and stall" work? Show this by a sketch.
18. Describe the process of boring against an old working or waste, and state what precautions you would use.
19. The roof of a roadway is very destructive of timber and is almost impossible to support, what course would you try?
20. In driving the west levels in a seam of coal dipping to the south at the rate of 1 in 6, an upthrow fault of 15 yards is met with; what would you do to recover the coal? If it were tunnelled out, what would be the length of the tunnel?

4. *Gunpowder.*

21. What is gunpowder made of?
22. How do you make a cartridge?
23. Describe the material you would use in tamping.
24. What would you do in case of a missed shot?

5. *Machinery.*

25. What is the difference between a condensing and a noncondensing engine?
26. What is the principle of the Cornish pumping engine?
27. What quantity of water is lifted per minute by a bucket pump, the diameter of the working barrel being 14 inches, the length of stroke 7 feet, and the number of strokes per minute $6\frac{1}{2}$?
28. The water in a boiler has become dangerously low, what would you do?
29. Describe the method of applying a balance to pit ropes.

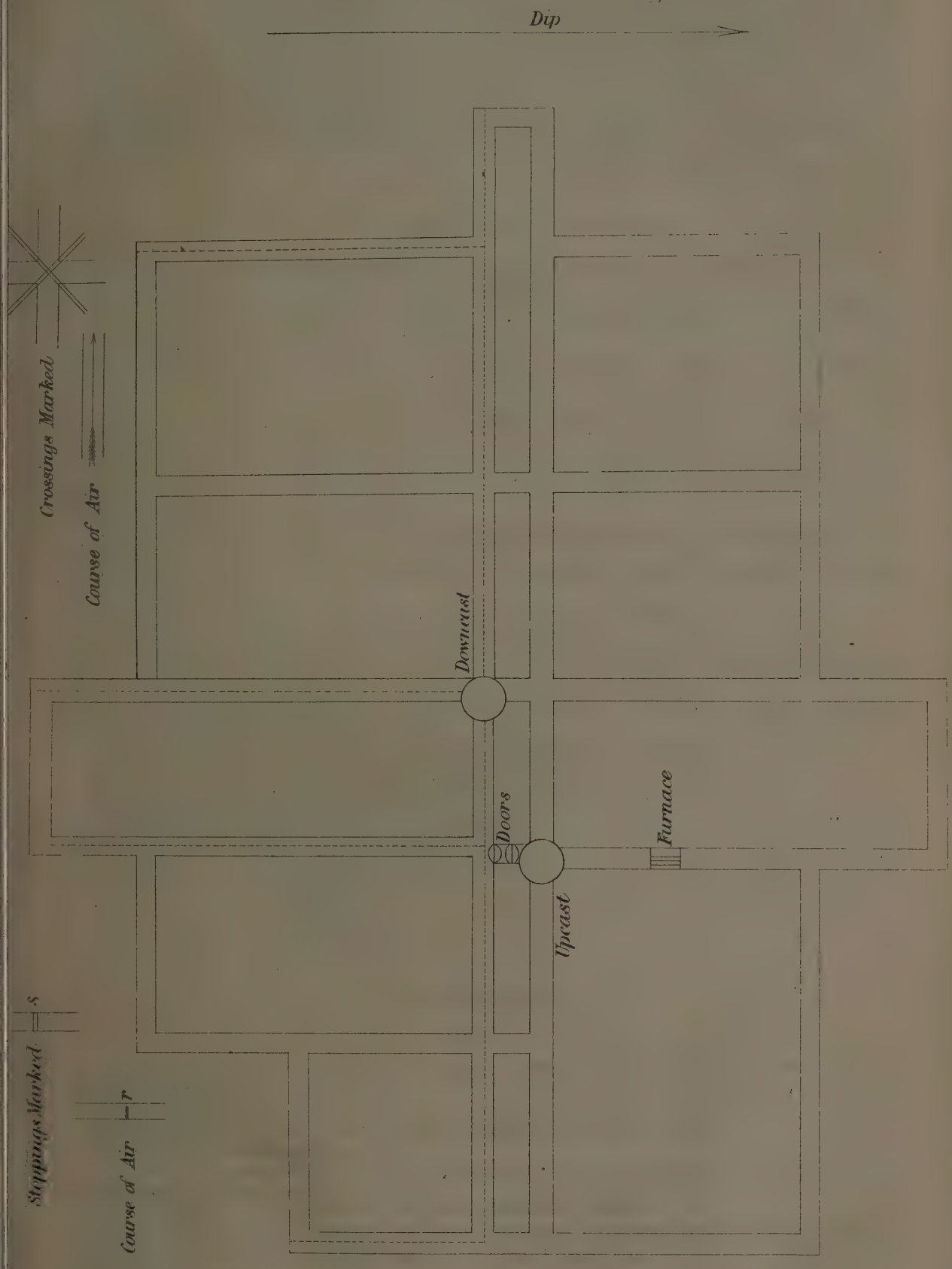
DECEMBER 1873.

Questions.

1. Name shortly the common sources of danger to be guarded against in ordinary sinking without pumps.
2. Describe the method of putting in a length of bricking in a sinking pit.
3. Why does the air in the upcast shaft, heated by a furnace, rise?
4. What different gases given off in mines are you acquainted with, and what are their peculiarities?
5. What would be the effect of putting a light into firedamp unmixed with air?
6. Why when firedamp explodes inside a safety lamp does the flame not pass through the gauze?
7. What is an air crossing, and what is its use?

PLAN ACCOMPANYING Mr DICKINSON'S REPORT.

To face Question 15. Examination June 1873.



15, Ventilate the workings shewn on this Plan, without using any air doors, except those shown; The drawing roads are distinguished by dotted lines.

8. How many cubic feet of air per minute are there passing along an air-way 7 feet high × 10 feet wide, the velocity of the air current being 500 feet per minute?
9. Describe by a sketch the different methods of working coal with which you are acquainted, indicating the air currents?
10. What precautions would you use in approaching workings expected to contain water or gas?
11. Why should a place be visited as soon as possible after the firing of a shot in it?
12. Where two mines, each having an inclination of 1 vertical for 8 horizontal, are 50 yards apart vertically, what is the shortest length of a level tunnel to connect the two?
13. How much larger is an air-way 8 feet × 8 feet than one 4 feet × 4 feet?
14. What is a vacuum, what pressure corresponds with it, and to what is this pressure due?
15. What is a barometer, thermometer, anemometer, and water-gauge?
16. How would a water-gauge be affected by contracting an air-way at a given place?

JUNE 1874.

QUESTIONS.

1. Name the different gases given off in mines, and give their respective properties.
2. Will firedamp unmixed with air support combustion?
3. What is the principle upon which a Davy lamp is constructed, and what constitutes its safety?
4. Name the different methods of working coal. Describe them by sketches, and show how you would ventilate.
5. What precaution is necessary where gas is given off and known to exist in a cavity above an air-way?
6. What precaution should be observed after firing shots in working places?
7. Show, by sketch, the method of boring you would recommend in approaching workings known to contain water or gas.
8. In a mine with an inclination of 1 in 6 dipping to south a fault of 8 yards up running north and south is met with in the east levels; in what direction should a level tunnel be driven to gain the coal, and what length of tunnel would it require?
9. Describe the barometer, thermometer, anemometer, and water-gauge, and their respective uses in mines.
10. Give the method of walling a sinking pit, and state what precaution should be taken where gas is given off.
11. What is the proportion at which air and firedamp mixed is most explosive?
12. Describe by a sketch a furnace, dumb-drift, and air crossing.
13. Give the contents in cubic feet of a space 10 yards long, 3 yards wide, and $2\frac{1}{2}$ yards high.
    If this space was full of water, how long would it take a pump to empty it, delivering at the rate of 20 gallons a minute, there being $6\frac{1}{4}$ gallons in a cubic foot?
14. If the area of an air road be 50 square feet, what velocity must be attained in the air current to produce 25,000 cubic feet of air per minute?
15. Describe, by sketch or otherwise, the different kinds of pumps used in pits.
16. What is the first General Rule in the Coal Mines Regulation Act, 1872?
17. What is the General Rule in regard to the fencing of places?
18. What is the duty of the person in charge of any part of a mine in case of danger arising from gas, and what should be done before workmen can be re-admitted according to the General Rule?
19. What does the General Rule provide for as to gunpowder; viz.:
    As to its storage,
    Quantity in one place,
    Charging of it,
    Missed shots, and
    Its use on finding gas in the working places?

DECEMBER 1874.

QUESTIONS.

1. What are the restrictions as to the employment underground of boys and male young persons in the Coal Mines Regulation Act, 1872?
2. What notices are required to be given in case of accidents, and to whom should they be sent?
3. What places in a mine are required to be ventilated, and to what extent?
4. Which places should be fenced off?
5. What is the general rule as to safety lamps and lights in places where there is likely to be an accumulation of firedamp?
6. Where are man-holes or places of refuge required to be provided?
7. Of what is atmospheric air, or the common air we breath, composed, and in what proportions?
8. What is carbonic acid or blackdamp?
9. What is oxygen?
10. What is nitrogen?
11. By what other name is firedamp known?
12. State generally what you know of the above-named gases, as to where found, and their effect upon life or combustion.

13. What are the general laws relating to the friction of air in mines?
14. Describe by sketch any methods of getting coal with which you are acquainted and indicate the air currents.
15. In an up-brow where the inclination of the mine is 1 in 7, a fault of 10 yards down is met with; what is the shortest length of level tunnel necessary to gain the coal?
16. In an air-way of 5 feet wide by 4 feet 6 inches high, the anemometer registers 550 as the velocity per minute; what is the quantity of air passing?
17. What is a furnace—a dumb-drift—and an air crossing? Show by sketch where and how each is applied.
18. What quantity of water in gallons will a tank contain, the dimensions being 9 ft. by 8 ft., by 4 ft. 6 in., there being $6\frac{1}{4}$ gallons to the cubic foot?
19. What is the use of a barometer about a mine?
20. What is the water-gauge used in mines, and what is its use?
21. What is an anemometer?

DECEMBER 1875.

Questions.

On the Coal Mines Regulation Act, 1872.

1. To what extent does the first general rule require noxious gases to be diluted?
2. How does the Act provide for the frequent inspection of working places in a mine?
3. What is the law with regard to working in any dangerous part of a mine, and also as to resuming work in such place?
4. What provision must be complied with in approaching places likely to contain a dangerous accumulation of water?

On Atkinson's treatise on Ventilation.

5. What is the least proportion of firedamp to common air that can be detected by the candle?
6. What is the greatest proportion, as above, that will not explode?
7. What is the most explosive proportion?
8. Beyond what proportion would a light be extinguished?
9. What properties and other names has blackdamp?
10. An air-way is 5 feet square and 1,000 yards long. State,
    (*a*) Its Perimeter.
    (*b*) ,, Sectional area.
    (*c*) ,, Rubbing surface.
    (*d*) The velocity of a current of 10,000 cubic feet per minute in the above air-way.
11. How would the water-gauge be affected if the power required to produce the last-mentioned current were so increased as to double the quantity of that current?
12. How would the amount of the power required to maintain this doubled current be affected?

On Practical Mining.

13. Give a sketch of any one system of working with which you are acquainted showing the air currents by arrows and also showing the doors, stoppings, and crossings.
14. Show, by sketch, a method of airing by brattice a set of three levels in course of driving.

N.B.—Further questions on practical mining will be put to the candidates as they appear before the examiners.

LIST OF MINES classed under the Coal Mines Regulation Act in the portion of Mr. DICKINSON'S DISTRICT, consisting of NORTH and EAST LANCASHIRE, 1875 and 1876.

Owner or Company.	Name of Mine or Colliery.	Where situated.
Altham Colliery Co., (John J. Rippon), Altham, Accrington	Altham	Altham.
	Whinney Hill	Ditto.
Arley Main Co., Horwich Junction, Bolton	Park Hall	Blackrod.
Ashton Moss Colliery Co., Audenshaw, Manchester	Ashton Moss	Ashton-under-Lyne.
Ashworth, Edmund, and Sons, Egerton Mills, Bolton	Cheetham Close	Egerton.
Ashworth, Edward, and Co., Ld., Cowpe, Waterfoot, Manchester.	Brandwood Moor	Brandwood Moor.
Ashworth, Ralph, and Co., Ld., Littleborough, Manchester.	Starring Coal and Fire-clay.	Littleborough.
Ashworth and Tomlinson	Broadhalgh	Rochdale.
Ashworth and Townsend	Hugh Mill	Waterfoot, Manchester.
Astley and Tyldesley Coal and Salt Co., Ld., Tyldesley, Manchester	Cross Hillock	Astley.
	Nook	Tyldesley.
	Tyldesley	Ditto.
Bagslate Moor Colliery Co.	Bagslate Moor	Rochdale.
Bank Colliery Co.	Bank	Little Hulton, Bolton.
Bardsley Colliery Co.	Bardsley	Ashton-under-Lyne.
Bardsley Coal and Cannel Co.	Bardsley Bridge	Ditto.
	Park	Ditto.
Barker, Jas., Charnock-Richard, Chorley, Lanc.	Pemberton House	Welch Whittle.
Belfield Colliery Co., Ld.	Belfield	Rochdale.
Bennett, Matthew, and Brothers	Street Gate	Little Hulton, Bolton.
Berry, John, and Sons	Smethurst Hall Clay	Birtle, Bury, Lanc.
Blackrod and Bryn Moss Coal and Cannel Co., Ld.	Marklands	Blackrod, Chorley, Lanc.
Blainscough Hall Colliery Co., Coppull, Chorley, Lanc.	Blainscough Hall	Coppull.
	Welch Whittle	Welch Whittle.
Bradbury, John and Thos.	Clayton	Manchester.
Bradford, the Earl of,— Estate Office, Bolton	Aqueduct	Haulgh.
	Burnden	Burnden.
	Gravel Hole	Great Lever.
	Great Lever	Ditto.
	Hacken	Darcy Lever.
	Raikes	Great Lever.
Bradford Colliery Co.	Bradford	Manchester.
Bridgewater Trustees— Colliery Office, Walkden, Bolton	Ashtonsfield	Little Hulton.
	Barracks	Ditto.
	Bridgewater	Worsley.
	Delph	Middle Hulton.
	Edge Fold	Worsley.
	Ellesmere	Ditto.
	Ellenbrook	Tyldesley.
	Gatley	Ditto.
	Linnyshaw	Worsley.
	Lords Moss Field	Farnworth.
	Machine	Ditto.
	Mangnalls	Worsley.
	Mosley Common	Tyldesley.
	Sanderson	Worsley.
	Saplingfield	Middle Hulton.
	Tonges Field	Farnworth.
	Wardley Coppice Field	Worsley.
	Watergate	Middle Hulton.
Brierley, James, and Son	Brandwood Moor	Stacksteads, Manchester.
Brinsop Hall Coal Co., Ld., Wigan	Brinsop Hall Arley	Westhoughton.
	Ditto King	
	Ditto Yard	
Broad Oak Colliery Co., Ashton-under-Lyne	Broad Oak	Ashton-under-Lyne.
	Nook	Ditto.
Brocklehurst, Thomas	Victoria	Rumworth, Bolton.
Brooks and Pickup, Towneley, Burnley	Cupola	Hameldon.
	Portsmouth Fire-clay	Cliviger.
	Towneley Arley	Burnley.
	Towneley Bing	Towneley.
	Towneley Drift	Ditto.
	Wholaw Nook	Wholaw.
Brothers, O., Ld.	Livesey Fire-clay Works	Livesey, Blackburn.
Buckley, John, Wharf Mill, Rochdale	Bell Isle	Tonnacliffe.
	Tonnacliffe	Ditto.

List of Coal Mines in North and East Lancashire—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
Bullough, Adam	Waterside	Eccleshill, Darwen.
Butterworth and Brooks, Sunnyside, Rawtenstall, Manchester.	Hailstorm	Cowpe, Waterfoot.
Butterworth, Edmund, and Sons, Denshaw Vale Print Works, Delph, Saddleworth.	Crow Knowl	Crompton.
Butterworth, James, Exors. of	Oaken Clough	Bacup.
Butterworth, James, and Son, Greenbooth, Rochdale	Knowl	Woodhouse Lane.
	Tenterfield	Wolstenholme.
Chamber Colliery Co., Hollinwood, Manchester	Alkrington	Alkrington.
	Oak	Hollinwood.
	Chamber	Oldham.
	Denton Lane	Chadderton.
	Ferney Field	Ditto.
	Hunt Clough	Ditto.
	Stockfield	Ditto.
	Wood Park	Ashton-under-Lyne.
Charlton, Francis, and Sons	Wharton	Little Hulton, Bolton.
Clifton and Kersley Coal Co., Clifton, Manchester	Botany Bay	Clifton.
	Robin Hood	Ditto.
	Manor	Kersley.
	Newtown	Clifton.
	Spindlepoint	Kersley.
	Wetearth	Clifton.
Cliviger Coal Co., Cliviger, Burnley	Coppy	Cliviger.
	Hurstwood	Ditto.
	Railway	Ditto.
	Union	Ditto.
Cockeymoor Colliery Co.	Cockeymoor	Radcliffe, Manchester.
Coney Coal and Fire-clay Co., Ld., Darwen	Coney	Over Darwen.
Crankshaw, John	Winter Hill Fire-clay	Horwich, Bolton.
Crossley, Charles	Crook Bank	Wardle, Rochdale.
Darcy Lever Coal Co., Darcy Lever, Bolton	Croftside	Darcy Lever.
	Davenport	Ditto.
	Snow Hill	Ditto.
	Victoria	Ditto.
Darwen Mining Co., Ld., Blackburn	Whitebirk	Lower Darwen.
Dearden, James Griffiths,— The Orchard, Rochdale	Cartridge Nook	Whitworth.
	Handle Hall	Calderbrook.
	Land	Shawforth.
	South Grain	Todmorden Moor, Dulesgate.
	Toadleach	Healey.
	Todmorden Moor	Clough Foot, Dulesgate.
	Tooter Hill	Sharneyford.
	Wallnook	Wardle.
Denton Colliery Co., Ld., Denton, Manchester	Albert	Haughton.
	Burton Nook	Denton.
	Denton	Ditto.
	Great Wood	Ditto.
	Parsonage	Ditto.
	Top Pit	Ditto.
	Victoria	Haughton.
Derbyshire, Ralph, and Son, Hendham Vale, Manchester	Bench Carr Fire-clay	Wardle, Rochdale.
Dewhurst, Hoyle, and Smethurst	Anderton Hall	Blackrod, Chorley, Lanc.
Diggle, James, Westleigh Collieries, Leigh, Manchester	Heyfield	Westleigh.
	Lower Hall	Ditto.
	Owens	Ditto.
	Westleigh	Ditto.
Dronsfield, Bardsley, and Lees, Fairbottom Colliery, Ashton-under-Lyne	Dock	Fairbottom.
	Tanfield	Ditto.
Duckworth, Lawrence, Executrix of, Sheep Hey, Ramsbottom, Manchester	Scout Moor	Shuttleworth.
	Shipperbottom	Walmersley.
Dunkenhalgh Colliery Co., Ld., Church, near Accrington	Blackburn	Whitebirk, Blackburn.
	Coppy Clough and Park	Church.
	Dillhall	Enfield.
	Rishton	Rishton.

List of Coal Mines in North and East Lancashire—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
Earnshaw, Luke	Midgelden Brick Works	Dulesgate, Todmorden.
Eccleshill Coal Co., Ld., Darwen	Harwood Fold	Eccleshill.
	Princess	Ditto.
	Snowball	Over Darwen.
	Sudell Side	Ditto.
	Tithe Barn	Ditto.
	Ellisonfold	Ditto.
Entwisle, Ralph, Ld., Darwen Fire-clay Works, Darwen	Cranberry Moss	Entwistle.
Fairburn, Edmund	Bank Hey	Wardle, Rochdale.
Fish, N. J., and L.	Wilders Moor	Rivington, Bolton.
Fishwick, H. H., and Co., Brotherod Colliery Office, Rochdale	Brotherod	Rochdale.
	Stoney Heys	Healey.
Fletcher, James, and Brothers	Higher Shore	Littleborough, Manchester.
Fletcher, John, Ladyshore Colliery, Little Lever, Bolton	Owl Hole	Little Lever.
	Victoria	Ditto.
Fletcher, Burrows, and Co., Atherton Collieries, Atherton, Manchester	Chanters	Atherton.
	Crumbouke Day Eye	Ditto.
	Gibfield	Ditto.
	Howbridge	Ditto.
	Lover's Lane	Ditto.
Fletcher, Thomas, and Sons, Bradley Fold Collieries, Little Lever, Bolton	Bally	Little Lever.
	Black Moss	Radcliffe.
	Breightmet	Breightmet.
	Middle Bents	Little Lever.
	Railway	Ainsworth.
	Stopes	Little Lever.
	Wolstenholmefold	Radcliffe.
Fletcher, Thomas, and Sons	Great Boys	Tyldesley, Manchester.
Fletcher, Thomas, and Sons, Outwood Colliery, Manchester	Outwood	Outwood.
	Ringley	Ditto.
Gerrard, John, and Sons	Clamerclough Pottery	Farnworth, Bolton.
Gibson, John, and Co.	Smithfold	Little Hulton, Bolton.
Glodwick Colliery Co.	Glodwick	Oldham.
Great Harwood Co., near Accrington	Great Harwood	Great Harwood.
	Martholme	Ditto.
Greenwood and Co., Rockcliffe Vale Mill, Bacup	Lane End	Bacup.
Haigh, Reuben, and Co.	Foulclough	Inchfield Moor, Walsden, Todmorden.
Hall, Adam	Laneshaw Bridge	Colne.
Hall, John, Walmersley, Bury, Lanc.	Snape Hill	Walmersley.
Hall and Rogers, Smithy Bridge, Littleborough	Cleggswood Fire-clay	Littleborough.
Hardcastle, Edward, Breightmet Colliery, Bolton	Breightmet	Breightmet.
	Higher Croft	Ditto.
	Tonge	Tonge.
Hardcastle, Thomas, Bradshaw Works, Bolton	Hillend	Harwood.
Hardman, Brothers, Acres Mill, Stacksteads, Manchester.	Helmclough	Greensmoor.
Hargreaves, George, and Co., Baxenden Collieries, Baxenden, Manchester	Bellthorn	Yate and Pickup Bank.
	Cat Hall	Broad Oak, Accrington.
	Dewhurst Drift	Baxenden.
	Hole in Bank	Accrington.
	Miller Fold	Ditto.
	Moleside	Ditto.
	Railway and Victoria	Baxenden.
	Scaitcliffe	Accrington.
	Wood Nook	Ditto.
	Worsley	Baxenden.
Hargreaves, George, and Co., Rossendale Collieries, Newchurch, Manchester	Brex	Lower Whitwell Bottom.
	Gambleside	Crawshaw Booth.
	Goodshaw Hill	Higher Booths.
	Grime Bridge	Middle Whitwell Bottom.
	Meadows	Bacup.
	Nabb	Newchurch.
	Old Clough	Bacup.
	Swinshaw	Crawshaw Booth.
	Stacksteads	Stacksteads.

List of Coal Mines in North and East Lancashire—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
Hargreaves, John, Exors. { Burnley Collieries; Burnley - - -	Bank Hall - -	Burnley.
	Beehole - -	Ditto.
	Broughton - -	Ightenhill Park.
	Burnt Hills - -	Wholaw Nook.
	Clifton - -	Burnley.
	Gannow - -	Habergham.
	Habergham - -	Ditto.
	Hapton Valley -	Hapton.
	Padiham - -	Padiham.
	Reedley - -	Reedley Hallows.
	Rowley - -	Burnley.
	Trawden - -	Trawden.
	Whittlefield - -	Burnley.
Hartshead Colliery Co., 22, Victoria Street, Manchester	Hartshead - -	Ashton-under-Lyne.
Heap, Thomas, and Son, Haugh, Rochdale - -	Haugh Hey - -	Butterworth.
Heys, Henry, Brandwood Quarry, Stacksteads, Manchester.	Tongue End Pasture -	Facit.
Hic-bibi Coal and Cannel Co. - - -	Hic-bibi - -	Coppull, Chorley, Lanc.
Hill, Abraham - - - -	Rock View - -	Whitworth, Rochdale.
Hilton House and Red Moss Coal Co., Ld. - - {	Coppull Hall - -	Coppull.
	Hilton House - -	Westhoughton, Bolton.
Howard, James - - - - -	Sheep Bank - -	Littleborough, Manchester.
Howarth, Jeremiah - - - -	Green Booth - -	Woodhouse Lane, Rochdale.
Howarth, Zech. and James - - - -	Woodhouse Lane -	Ditto.
Hulton, Wm. Ford, Hulton Colliery Office, Hulton Park, Bolton - - - - -	Arley - -	Over Hulton.
	Park - -	Ditto.
	3 quarters - -	Ditto.
	Yard - -	Ditto.
Hyde and Haughton Coal Co., Hyde, Manchester -	Broomstair - -	Denton.
Ireland, Buckley, and Co. - - -	Swindrod Colliery and Firebrick Works.	Littleborough, Manchester.
Kershaw, James, Eafield Oil and Grease Works, Smithy Bridge, Rochdale.	Clough House - -	Wardle.
Kershaw, Bros., Sladen Mill, Littleborough, Manchester Discontinued.	Light Owlers - -	Littleborough.
Knowles, Andrew, and Sons, Ld., Office, Pendlebury Colliery, near Manchester - - -	Agecroft - -	Pendlebury.
	Allen's Green - -	Radcliffe.
	Canal Side - -	Bank Top, Radcliffe.
	Clifton Hall - -	Clifton.
	Clifton Moss - -	Ditto.
	Dingle - -	Little Lever.
	Farnworth Bridge -	Ditto.
	Foggs - -	Darcy Lever.
	Green Lane - -	Radcliffe.
	Hagside - -	Bank Top, Radcliffe.
	Hampson Meadow -	Radcliffe.
	Little Hey - -	Kersley.
	New Rivin - -	Little Lever.
	Openshaw Fold -	Bank Top, Radcliffe.
	Pendlebury - -	Pendlebury.
	Pendleton - -	Pendleton.
	Ringley Fold - -	Outwood.
	Withins Lane - -	Radcliffe.
Lanefoot Colliery Co. (R. Ashworth and J. B. Bamford) {	Lanefoot - -	Littleborough, Manchester.
	Lydgate - -	Ditto.
Law, James I., Trustees of - - -	Greave New - -	Bacup.
Leach, James, Kitcliffe, Rochdale - - -	Elpit Edge - -	Butterworth.
Leach, Thomas, Lee Wood, Bacup - -	Lee - -	Brandwood Moor.
Lees, Benj., Exors. of - - - -	Ealees - -	Littleborough, Manchester.
Lees, Benj., and Joseph, Brittania, Bacup - -	Freeholds - -	Shawforth.
Lees, Ashworth, and Co. - - - -	Syke - -	Littleborough, Manchester.
Lees and Mayall, Greenacres Moor, Oldham - {	Barrowshaw - -	Barrowshaw.
	Count Hill - -	Higher Barrowshaw.

List of Coal Mines in North and East Lancashire—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
Leeses, Jones, and Co., Holebottom Colliery, Oldham	Rhodes Bank	Oldham.
Lever Edge Colliery Co., 3, Stamford Street, Ramworth, Bolton.	Lever Edge	Great Lever.
Limehurst Colliery Co. (J. and A. Buckley)	Limehurst	Ashton-under-Lyne.
Little Harwood Colliery Co., Ld., 6, Bridge Street, Darwen.	Little Harwood	Little Harwood.
Law, David	Intake	Waterfoot, Manchester.
Lomax, Samuel, and Co.	Smallbridge	Smallbridge, Rochdale.
Lomax, John, and Co., Rooley Moor Colliery, Rochdale	Greenland	Rooley Moor.
	Hunger Hill	Ditto.
Lord, James, and Brother, Norden, Rochdale	Bagslate Moor	Norden.
Lord, James	Blue Ball	Bacup.
Lord, John	Deansgreave	Ditto.
Lord, Robert	Bamford Closes	Wolstenholme, Rochdale.
Lords Field Colliery Co.	Lords Field	Ashton-under-Lyne.
Lower Darwen Colliery Co., Oswaldtwistle Colliery Office, Accrington.	Lower Darwen	Lower Darwen.
Maden, John, and Son	New Line	Bacup.
Marland, James William, Robert and Co.	Bower	Hollinwood, Manchester.
Marland, John and Co.	Honeywell Lane	Oldham.
Mayall, John	Lower Moor	Ditto.
Meadow Head Colliery Co. (Collingwood and Co.)	Meadow Head	Wolstenholme, Rochdale.
Mellodew, George	Hodgeclough	Oldham.
Mellodow, Thomas, and Co., Moorside, Oldham	Lower Sunfield	Moorside.
	Sholver Lane	Ditto.
Milnes, E. D., and Brother, Lumn Mills, Bury, Lanc.	Cross Hall	Lumn, Birtle.
Michell, Rev. Wm.	Heskin Hall	Heskin, Chorley, Lanc.
Mills, Jos., and Brothers	Blue Ball	Bacup.
Moscrop, J. & W.	Red Lumb	Wolstenholme, Rochdale.
Moston Colliery Co., Ld.	Moston	Moston, Failsworth, Manchester.
Newby, John, Millhouses, Hornby, Lancaster	Smear Hall	Wray-with-Botton.
Nightingale, Peter, and Co.	Mesne Lea	Worsley, Manchester.
Oldham, Middleton, and Rochdale Coal Co., Ld., Edge Lane, Oldham	Bankhouse and Sholver	Crompton.
	Edge Lane	Ditto.
	Gravel Hole	Rochdale.
	Hanging Chadder	Ditto.
	Hartford	Oldham.
	Jubilee	Crompton.
	Lee	Chadderton.
	Low Crompton	Ditto.
	Robin Hill	Oldham.
	Sholver	Crompton.
	Sinking Pit	Royton.
	Woodside	Chadderton.
Parke, Frederick	Withnell Fire-clay	Chorley, Lanc.
Parks, Wm. Thornton, Elton Colliery, Bury, Lanc.	Alderbarrow	Elton.
	Bolton Road	Ditto.
Peake, Andrew	Wilderswood Fire-clay	Horwich, Bolton.
Place, Joseph, and Sons	Hoddlesden	Hoddlesden, Darwen.
Platt Brothers, and Co., Ld., Oldham	Brushes Clough	Crompton, Oldham.
Priestley, Peter, Euxton Mill, Chorley, Lanc.	Bolton Green	Charnock Richard.
Rake Firebrick Co., Ld.	Rake Pottery	Littleborough, Manchester.
Ramsbottom, Thos., and Sons, Ld.	Birtle Dean	Birtle, Bury, Lanc.
Ramsden, William, Shakerley Collieries, Tyldesley, Manchester	Messhing Trees	Tyldesley.
	Shakerley	Shakerley.
Rawsthorne and Fielden	Heath Charnock Fire-clay	Chorley, Lanc.
Rawstron, Ralph, Bridge Mills Colliery, Whitworth, Rochdale.	Long Acres	Whitworth.
Ridge Hill Coal, Firebrick, and Tile Co., Ld., Stalybridge.	Ridge Hill	Stalybridge
Rochdale Finance Co., Drake Street, Rochdale	Dearnley Fire-clay	Littleborough, Manchester.

List of Coal Mines in North and East Lancashire—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
Rocher Colliery Co., Ld., Parkbridge, Ashton-under-Lyne	Little	Park Bridge.
	Nelson	
	Pickford Wood	
Roscoe, James, Little Hulton, Bolton	Daisy Field	Tyldesley.
	New Lester	Ditto.
	Peel Hall	Little Hulton.
Roscow and Lord, Chadwick Hall, Rochdale	Birtle	Birtle.
Roscow and Lord	Stonehill	Farnworth, Bolton
Rydings Colliery Co.	Rydings	Wardle, Rochdale.
Sagar, Robert, and Brothers, Simonstone, Burnley	Hapton	Hapton.
	Simonstone	Simonstone.
Schofield, Ambrose	Knotthill Clough	Shawforth, Rochdale.
Scowcroft, Jethro, Tonge Colliery, Bolton	Tonge Fold	Bolton.
	Tonge Moor	Ditto.
Scowcroft, Samuel, Rosehill Colliery, Bolton	Rose Hill	Burnden.
Scowcroft, Samuel, Kearsley Colliery, Kearsley, Bolton	Doe	Kearsley.
	Moss	Ditto.
Seddon, John, and Son	Cow Lee Lane	Westhoughton, Bolton
Shaw and Hayes, Fire-clay Works, Thornlee, Lees, Manchester.	Lancashire and Yorkshire.	Thornlee.
Shorrock, Eccles, Brother, and Co., Darwen Mills, Darwen	Hollinshead	Tockholes.
	Winter Hill	Ditto.
Simpson, Thomas, and Co., Oswaldtwistle Colliery Office, Church Accrington	Aspen	Oswaldtwistle.
	Belthorn	Ditto.
	Broadfield	Ditto.
	Duckworth Hall	Ditto.
	Mossfield	Ditto.
	Stanhill	Ditto.
Smethurst, John, Higginshaw Lane, Oldham	Lowside	Oldham.
	Higginshaw	Royton.
Smith, Francis and Austin	Platts	Westhoughton, Bolton.
Snydale Hall Colliery Co., Ld., Chequerbent, Bolton, (19, King Street, Wigan.)	Snydale Hall	Ditto Ditto.
Speakman, John, Exors. of, Broadfield Colliery, Westleigh, Leigh, Manchester	Broadfield	Westleigh.
	Hearts o' th' Meadow	Ditto.
Speakman, J.	Bankfield	Westleigh, Leigh, Manchester.
	New	Bedford.
Spedding, Chambers, and Jones	Arley Hall	Blackrod, Chorley, Lanc.
Spedding, W. and J.	Moorside	Ainsworth, Bolton.
Springvale Coal, Coke, and Fire-clay Co., Ld., 62, Bolton Road, Darwen.	Taylor's Green	Sough.
Stand Lane Colliery Co., Ld., Radcliffe, Manchester	Stand Lane	Pilkington.
	Whitefield	Ditto.
Stone, Thomas, and Sons	Arbories	Padiham, Burnley.
Stott, James, and Co.	Unity Brook	Kersley, Manchester.
Stott, John, junr.	Bank Lane	Wardle, Rochdale.
Stott, Richard and William, Rochdale	Ashworth	Ashworth.
	Dearnley	Smallbridge.
	Milnrow	Milnrow.
	Tunshill	Ditto.
Stott, Samuel, and Co.	Hey Clough	Wardle, Rochdale.
Syke Lane Colliery Co.	Syke Lane	Littleborough, Manchester.
Taylor, John, and Co., Hollingworth Colliery, Littleborough, Manchester	Hollingworth	Hollingworth.
	Back o' Cleggs' Wood	Ditto.
Taylor, Peter	Oak	Coppull, Chorley, Lanc.
Temperley, Thomas	Cloughhead Fire-clay	Sharneyford, Bacup.
Tetlow, John, Summit Fire-clay Works, Littleborough, Manchester.	Lightowlers	Littleborough.
Tetlow, John	Rawlinson Bridge Fire-clay.	Heath Charnock, Chorley, Lanc.
Townsend and Co., Greave Collieries, Bacup	Britannia	Bacup.
	Greave	Ditto.
	Sharneyford	Ditto.
Turton Moor Coal and Fire-clay Co., Egerton, Bolton	Turton	Turton.
Tweedale, Samuel, Broadley Mills, Rochdale	Tonnacliffe	Tonnacliffe.
Tweedale, Jacob and Sons	Healey Hall	Healey Hall, Rochdale.
Tyldesley Coal Co., Ld., Tyldesley, Manchester	Cleworth Hall	Shakerley.
	Combermere	Tyldesley.
	Shakerley	Shakerley.
	Tyldesley	Tyldesley.

List of Coal Mines in North and East Lancashire—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
United Co-operative Coal Mining Society, Ld., Cotton Waste Exchange, Market Place, Manchester.	Bugle Horn	Westhoughton.
Walmsley Coal Co.	Walmsley	Trough Gate, Bacup.
Walton, James	Horncliffe Moor	Rawtenstall, Manchester.
Warburton O. and W.	Arley	Lostock, Bolton.
Westhoughton Coal and Cannel Co., Ld.	Westhoughton	Westhoughton, Bolton.
Wharton Hall Coal Co., Little Hulton, Bolton	Wharton Hall	Shakerley.
White, David	Boar-edge	Bury, Lanc.
Whittaker, James, and Sons, Scout Moor Quarries, Shuttleworth, Bury, Lanc.	New Hall Close	Tottington-Higher-End.
Whittle, Thomas	Duxbury	Duxbury, Chorley, Lanc.
Whyatt, Geo., and Son, Openshaw Dye Works, Manchester.	Openshaw (for water)	Openshaw.
Wigan Coal and Iron Co., Ld., Wigan	Hewlett	Westhoughton.
	Snapes	Westleigh.
	Westleigh 1, 2, 3, and 4	Ditto.
Willans, Thomas B., Rydings Mills, Rochdale	Nutwood	Rydings, Wardle.
Williams, Edward	Bradford Fire-clay	Bradford, Manchester.
Witham, James Sutcliffe	Cragg	Padiham, Burnley.
Woods, William, and Son, Scot Lane Collieries, Wigan	Scot Lane	Blackrod and Westhougton.

LIST of MINES classed under the Metalliferous Mines Regulation Act, in the portion of MR. DICKINSON'S DISTRICT, consisting of those within the Coalfield of NORTH and EAST LANCASHIRE, also in CHESHIRE and SUSSEX.

WITHIN THE COALFIELD OF NORTH AND EAST LANCASHIRE.

Brocklehurst, Wm., and Co. (Wm. Mellor, Agent), Ardwick Lime Works, Manchester.	Ardwick Limestone	Ardwick, Manchester.
Cunliffe, Mr. Richd., Scout Quarries, Newchurch, Manchester	DeansgreaveFlag and Slate	Near Bacup.
	Scout Flag and Slate	Near Newchurch.
Entwisle, Robt. S., and Wm., Sough, Darwen	Sough Flag and Slate	Over Darwen.
Graham, Rev. P., Turncroft, Darwen	Turncroft Flag and Slate	Ditto.
Grindrod, John, and Co.	Blue Hole Flag and Slate	Tong End, Whitworth.
Heys, Henry, Brandwood Moor Quarries, Stacksteads, Manchester.	Tong End Pasture Flag and Slate.	Ditto Ditto.
Jackson, Robt., and Sons, Cock Hall, Facit, Rochdale	Schofield Hey Flag and Slate.	Schofield Rough Whitworth.
Jackson, Saml., Exors. of, Cowm Delf, Whitworth, Rochdale.	Moor Bottom Flag and Slate.	Cowm, Whitworth.
Pickup, James, Trustees of, Sough, Darwen	Greenleach Flag and Slate	Sough, Over Darwen.
	Old Flag and Slate	Ditto Ditto.
	Pole Lane Flag and Slate	Ditto Ditto.
Sanderson, Mr. James	Old Pits Flag and Slate	Tong End, Whitworth.
Turner, Mr. John	Moss Flag and Slate	Shawforth Moor, Whitworth.

CHESHIRE.

Alderley Edge Mining Co., Ld. (Mr. John Lawton, Secretary and Agent, Mr. Geo. Leaman, Manager).	Alderley Edge Copper	Alderley Edge, near Manchester.
Falk, H. E., Meadowbank Salt Works, Winsford, Cheshire.	Meadowbank Rock-Salt	Winsford.
Fletcher and Rigby	Marston Old Rock-Salt	Marston, Northwich.
Hayes, Wm.	Marston Hall Rock-Salt	Ditto.
Steenstrand, Wm.	Steenstrands Rock-Salt	Wincham, Northwich.
Thompson, John, and Son, Witton Street, Northwich	Marston Pool Rock-Salt	Marston, Northwich.
	Penny's Lane Rock-Salt	Witton, Northwich.
	Platts Hill Rock-Salt	Wincham, Northwich.
	Witton Hall Rock-Salt	Witton, Northwich.
Verdin, Joseph, and Sons, Salt Works, Winsford, Cheshire	Adelaide Rock-Salt	Marston, Northwich.
	Barons Quay Rock-Salt	Witton, Northwich.
Williamson, Robert	Wincham Rock-Salt	Wincham, Northwich.

SUSSEX.

Sub-Wealden Gypsum Co. (Chas. C. Pratt, Secretary, J. A. Bosworth, Agent, Humberstone, Leicester), Battle, Sussex.	Mountfield Gypsum	Near Battle.

List of Mines classed under the Coal Mines Regulation Act, in the portion of Mr. Dickinson's District, consisting of Ireland.

Owner or Company.	Name of Mine or Colliery.	Where situated.
CONNAUGHT:—COUNTIES LEITRIM, ROSCOMMON, AND SLIGO (Lough Allen Coalfield).		
Fawcett, Henry, & Co., Limited, Spencer Harbour Collieries, Drumkeerin, Carrick-on-Shannon.	Seltanaskeagh	Drumkeerin.
McGreevy, Owen	Gubberadda	Ballyfarnon, Carrick-on-Shannon.
O'Rourke, Patrick	Geevagh	Ditto.
Walsh, Patrick, Aughabehy, Ballyfarnon	Gubberadda	Ditto.
LEINSTER:—KILKENNY AND QUEEN'S COUNTIES (Leinster Coalfield).		
Baker, Wm., Garrendenny, Crettyard, Carlow	Boundary	Cloneen, Crettyard.
Betts, Thos.	Betts'	Moneen Roe, Castlecomer
Bradley, John, care of Joseph Dobbs, Coolbawn, Castlecomer.	Rockbridge	Coolbawn.
Bradley (big), John, care of Samuel Bradley, Little Castle, Castlecomer.	Upper Coolbawn	Ditto.
Bradley, Mr. John	Rock Bridge	Castlecomer.
Brennan, James, Coolbawn, Castlecomer	Rossmore	Bilboa.
Brennan, Michael	Curragh	Moneen Roe, Castlecomer.
Campion, Richd.	Moneen Roe	Castlecomer.
Cantwell, Michael	Tourtane	Ditto.
Close, John, care of Saml. Bradley, Little Castle, Castlecomer.	Upper Coolbawn	Coolbawn.
Close, Henry and Mrs. Eliza Bradley	East Skehana	Castlecomer.
Comerford, Lawrence	Clogh, Old	Clogh, Castlecomer.
Comerford, Thomas, Coolgreany, Kilkenny	Reevanagh	Tiscoffin, Kilkenny.
Curran, John	Mayhorah	Castlecomer.
Delaney, Patrick, Newtown, Crettyard, Carlow	Kilcruise	Near Wolfhill.
Dobbs, Joseph, Coolbawn, Castlecomer	Jarrow	Cloneen.
	Rock Bush	Coolbawn.
	Rock Wood	Ditto.
Edge, Benj. Booker, Clonbrock House, Crettyard, Carlow.	Hollypark	Crettyard.
Edge, Wm.	Towlerton	Ballickmoyler, Carlow.
Farrell, Mrs. Wm., care of Joseph Dobbs, Coolbawn, Castlecomer.	Rock	Coolbawn.
Hall and Dobbs, Monteen Colliery, Crettyard, Carlow	Monteen	Castlecomer.
Hosey, Mrs. L.	Bilboa (Queen's Co.)	Milford Carlow.
Hosey, Patrick	Clogrennan	Carlow.
Kerr, Thos.	Tourtane	Castlecomer.
Leinster Colliery Co., Ld., Ballylinan, Athy. (4, College Street, Dublin)	Ballylehane	Wolfhill.
	Modubeagh	Ditto.
Robson, Grace, & Co., Clogh Colliery, Castlecomer	Brian Clogh	Cloneen.
Rowe, Geo.	Ardough (Queen's Co.)	Milford, Carlow.
Shea, Wm.	Cloneen	Crettyard, Carlow.
Shortell, Michl.	Skehana	Castlecomer.
Warner, Thos., Moneen Roe, Castlecomer	Warner's	Cloneen, Castlecomer.
Williams, James, Coolbawn, Castlecomer	Lordship	Ditto.
MUNSTER:—COUNTIES TIPPERARY AND CORK.		
Mining Co. of Ireland, Limited, Slievardagh Collieries, New Birmingham, Thurles. (30, Lower Ormond Quay, Dublin)	Coalbrook and Bolintlea	Slievardagh.
	Earlshill and Ballynastic	Ditto.
	Foilacamin and Knockanglass.	Ditto.
	Venture Fair	Ditto.
	Lismacon	Kanturk, co. Cork.

List of Mines in Ireland—*continued.*

Owner or Company.	Name of Mine or Colliery.	Where situated.
ULSTER:—COUNTIES ANTRIM AND TYRONE.		
Annaghone Colliery Co., Annaghone, Stewartstown	Annaghone	Annaghone.
Crawshaw, Barlow, and Co.	Brackavill	Coal Island, Dungannon.
Devlin, Daniel	Ulster Fire-clay	Ditto.
Godden and McDonald	Ballycastle Coal and Ironstone.	Ballycastle, Ballymoney.
King, James A.	Coal Island	Coal Island, Dungannon.
M'Callan, B., and Co., Coal and Fire-clay Works	Brackavill	Ditto.
McGildowny, J. C., Abbeylands, White Abbey, Belfast	Blackband Ironstone	Ballycastle.
Sloan, Andrew, and Co.	Gortnaskae Fire-clay	Coal Island, Dungannon.
Tyrone Coal Mining Co., Ld., Edendork, Dungannon (9, Victoria Chambers, Belfast)	Congo	Edendork.
	Curran	Ditto.
	Drumglass	Ditto.

LIST OF MINES classed under the Metalliferous Mines Regulation Act in the portion of Mr. DICKINSON'S DISTRICT, consisting of IRELAND.

Owner or Company.	Mine.	Where situated.	County.
Acheson, Fred., Wooden Bridge, Ovoca	Ballinvally Gold	Wooden Bridge	Wicklow.
Antrim Iron Ore Co., Ld. (Robert Browne, Secretary), 1, Victoria Chambers, Belfast	Broughshane Iron Ore	Near Ballymena	Antrim.
	Cargan Iron Ore	Glenravel, Ballymena	Ditto.
	Cloneytrace Iron Ore	Near Ballymena	Ditto.
	Glenarm Iron Ore	Near Glenarm	Ditto.
	Libbert West Iron Ore	Ditto	Ditto.
	Newton-Crommelin Iron Ore.	Glenravel, Ballymena	Ditto.
	Rathkenny Iron Ore	Near Ballymena	Ditto.
Associated Irish Mine Co. (Mr. Geo. Oates, Manager) Cronebane Mine, Ovoca (Williams and Co., Perranarworthal, Cornwall).	Cronebane Copper, &c.	Ovoca	Wicklow.
Bantry Bay Barytes Co., Ld. (Mr. J. B. Eddy, Manager), Kilmocapogue, Bantry.	Bantry Bay Barytes	Near Bantry	Cork.
Belfast Mining Co., Ld. (J. A. Cochrane, Secretary), 5, Victoria Chambers, Belfast.	French Park Rock-Salt	Duncrue, Carrickfergus	Antrim.
Berehaven Mining Co., Ld. (R. Clog, Secretary, 4 and 5, Westmorland Street, Dublin; R. R. Nancarrow, Manager), Allihies, Bantry	Doneen Copper Ore	Allihies	Cork.
	Mountain Copper Ore	Ditto	Do.
Boaden, Wm., and Co., 34, Ramsden Street, Barrow-in Furness	Duneany Iron Ore*	Near Glarryford	Antrim.
	Urblereigh Iron Ore	Portrush	Do.
(Booth, H. W. Gore, Lissadell, Sligo) Sir R. Gore Booth, Bart., M.P., and Erasmus Smith's School	Gleniff Barytes*	Cliffoney	Sligo.
British Barytes Co., Ld., 91, Cathcart Street, Birkenhead, or G. Rudler, Liquidator, St. Michael's House, Cornhill, London, E.C.	Cahirolickaney and Derryfunstone Barytes.*	Dunbeacon, Durrus	Cork.
Chambers, Charles (Mr. John Robertson, Manager), Glenravel, Ballymena.	Evishacrow Iron Ore	Glenravel	Antrim.
Clonwilliam Quarrying and School Slate Manufacturing Co., Ld. (H. Algernon Colville, Secretary), Lucerne Buildings, Redcross Street, Liverpool.	Clonwilliam Slate	Wooden Bridge	Wicklow.
County Down Iron Ore Co. (James Greer), 85, Donegal Street, Belfast.	Deehommed Iron Ore	Near Ballynahinch	Down.

* Discontinued.

List of Mines in Ireland—*continued.*

Owner or Company.	Mine.	Where situated.	County.
Dalway, M. R., M.P., Salt Works, Carrickfergus.	Maiden Mount, Rock-Salt.	Duncrue, Carrickfergus	Antrim.
Darke, John Thomas, The Vale, Oatlands Park, Weybridge, Surrey.	Cloosh Lead Ore* -	Oughterard, Galway -	Galway.
Duckworth, John, Nursery Works, Radcliffe, Manchester.	Garton Steatite - -	Carratrasna, near Letterkenny.	Donegal.
Duneen Bay Mineral Co., Ld., Clonakilty	Muckruss Head Barytes	Clonakilty - -	Cork.
Dunloy Iron Ore Co., (Silas Evans, Manager), 9, Victoria Chambers, Belfast.	Drumnavaddy Iron Ore	Killagan, Dunloy -	Antrim.
Fisher, John, and Co., Glenravel Iron Ore Mines, near Ballymena.	Glenravel Iron Ore -	Slieveniah, Glenravel -	Ditto.
Foster, R. C., 22, Cockspur Street, Charing Cross, London.	Glandore Iron Ore, &c.	Skibbereen - -	Cork.
Fullerton, A. G. (John Dickson, The Castle, Ballintoy, Ballymoney).	Black Park Lignite* -	Ballintoy - -	Antrim.
Galway Mining Co., Ld. (Mr. Floyd, Manager), Oughterard, Galway -	Cregg Barytes - -	Oughterard - -	Galway.
	Glengola Lead Ore -	Ditto - -	Ditto.
General Mining Co. for Ireland, Ld. (L. Studdert and Thos. Baker, Liquidators), 58, Amien Street, Dublin.	Silvermines Zinc, &c.*-	Silvermines, Nenagh -	Tipperary.
Glenariff Iron Ore and Harbour Co., Ld. (John Ham, Secretary), 36, Walbrook, London.	Cloghcor Iron Ore -	Parkmore, Ballymena -	Antrim.
Hodgson, Henry (Henry Robinson, Manager), Ballygahan Mines, Ovoca -	Ballygahan Iron Pyrites	Ovoca - - -	Wicklow.
	Ballymoneen Iron Ore -	Ditto - -	Ditto.
Horse Island Mine Co., 91, Cathcart Street, Birkenhead.	Horse Island Copper Ore*	Horse Island - -	Cork.
Hyde, Samuel (Mr. Edwd. Daniel, Manager), Ballycummisk Mines, Ballydehob, Skibbereen - - - -	Ballycummisk Copper Ore.	Schull - - -	Ditto.
	Coosheen Copper Ore -	Ditto - -	Ditto.
Irish Hill Iron Ore Mining Co. (Mr. Alexander Sutherland, Manager), Carrickfergus.	Irish Hill and Straid Iron Ore.	Ballynure - -	Antrim.
Knockboy Mining Co. (Isaac Ross, Manager), Broughshane, Ballymena.	Knockboy Iron Ore -	Broughshane - -	Ditto.
Larne Iron Mining Co. (Thos. Fisher, Managing Owner), Larne.	Agnews Hill and Shanes Hill Iron Ore.	Kilwaughter, Larne -	Ditto.
Mining Co. of Ireland, Ld. (Wm. Harold, Secretary, 30, Lower Ormond Quay, Dublin); Knockmahon Copper Mines (Mr. F. Bennett, Manager), Piltown	Bonmahon Copper Ore	Knockmahon - -	Waterford.
	Glen Copper Ore -	Ditto - -	Ditto.
	North Tankardstown Copper Ore.	Ditto - - -	Ditto.
	Tankardstown Copper Ore.	Ditto - -	Ditto.
Mining Co. of Ireland, Ld., Luganure Mines (Mr. James Mitchell, Manager), Seven Churches, Rathdrum - -	Foxrock Lead Ore -	Seven Churches - -	Wicklow.
	Glendalough Lead Ore	Ditto - -	Ditto.
	Ruplagh Lead Ore -	Ditto - -	Ditto.
	Van Diemans Lead Ore	Ditto - -	Ditto.
Mount Cashel Iron Ore Co., Ld. (Silas Evans, Manager), 9, Victoria Chambers, Belfast (86, King Street, Manchester)	Coreen Iron Ore -	Broughshane, Ballymena	Antrim.
	Evishnably Iron Ore -	Glenravel, Ballymena -	Ditto.
	Gortnageeragh Iron Ore	Ditto - -	Ditto.
Parkmore Iron Ore Co. (Mr. Alex. Gillespie, Manager), Cushendall, Larne, (26, Sandhills Lane, Whitehaven.)	Parkmore Iron Ore -	Near Ballymena -	Ditto.
Parnell, Charles S., M.P., Avondale, Rathdrum.	Avondale Exploration -	Rathdrum - -	Wicklow.
Postlethwaite, Wm. Henry, Shanes Hill Iron Ore Mine, Larne.	Shanes Hill Iron Ore -	Larne - - -	Antrim.
Ritchie, Francis, and Sons, Belfast -	Ballypallady Iron Ore Quarry.	Templepatrick -	Ditto.
	Cleenvagh Iron Ore Quarry.	Aughnacliffe - -	Longford.
	Island Magee Lithomarge Quarry.	Larne - -	Antrim.
	Moville Iron Ore Quarry	Redcastle - -	Donegal.

* Discontinued.

List of Mines classed under the Metalliferous Mines Regulation Act—*continued.*

Owner or Company.	Mine.	Where situated.	County.
Scart Barytes and Minerals Co., Ld., Bantry, Cork.	Scart Barytes	Bantry	Cork.
Sunderland, Wm., 2, Waterloo Street, Birmingham (Mr. J. Phillips, Manager). Oola Mine, Tipperary.	Oola Lead Mine	Oola	Limerick.
Tom and Roney (Mr. Tom, Manager), Galway.	Gortmore Copper Ore, &c.*	Moycullen, Galway	Galway.
Valentia Slate Slab Co., Ld., Valentia, Killarney (8, Old Jewry, London, E.C.)	Valentia Slate	Island of Valentia	Kerry.
Wicklow Copper Mine Co. (Mr. John Hodge, Manager); Ballymurtagh Mines, Ovoca (113, Grafton Street, Dublin).	Ballymurtagh Copper Ore, &c.	Ovoca	Wicklow.
Wigan Coal and Iron Co., Ld., Wigan	Belleek Iron Ore*	Belleek	Fermanagh.
Williams and Co., Perran-ar-Worthal, Cornwall (Mr. James Higgins, Manager), Tigroney Mine, Ovoca.	Tigroney Copper Ore, &c.	Ovoca	Wicklow.

* Discontinued.

LIST of SALT WORKS using BRINE, 1876.

CHESHIRE.

Allcock, Geo., and Co., Winsford.
Ashton, N., and Sons, Northwich.
Beaman, W., Exors. of, Winsford.
Bowers, T. R., Northwich.
British Salt Co., Northwich.
Bush and Son, Winsford.
Cheshire Amalgamated Salt Co., Winsford, also Northwich and Sandbach.
Cross, G. and R. G., Winsford.
Deakin, Brothers, Northwich.
Deakin, Geo., Executrix, Winsford.
Deakin, James, Exors., Winsford.
Deakin, J. and W., Northwich.
Dean, Brothers, Northwich.
Dignum, Wm., Winsford.
Dodd, J. and T., Winsford.
Evans, Richd., Winsford.
Falk, H. E., Winsford.
Fletcher and Rigby, Northwich.
Gibson and Darsie, Northwich.
Hamer's Salt Co., Northwich.
Harrison, Thos., Exors., Winsford.
Hayes, Wm., Northwich.
Hickson, Wm., Northwich, also Winsford.
Higgin and Hickson, Northwich.
Hindley, Wm., Northwich.
Joule, J. H., Middlewich.
Leigh, Edmund, Winsford.
Lovett, James, sen., Northwich.
Lovett, James, jun., Northwich, also Winsford.
Milner, Edwd., Northwich.
National Patent Salt Works, Winsford.
Parks, Brothers, Winsford, also Northwich.
Pohl, Otto, Winsford.
Ravenhead Colliery Co., Winsford.
Rayner, T., and Co., Northwich.
Runcorn Soap and Alkali Co., Winsford.
Seddon, Ralph, Middlewich.
Shaw, James, sen., Winsford.
Shaw, James, jun., Winsford, also Northwich.
Simpson and Davies, Winsford.
Stubbs, Brothers, Winsford.
Thompson, Jabez, Northwich.
Thompson, John, and Son, Northwich, also Winsford.
Verdin, Joseph, and Sons, Winsford, also Northwich and Middlewich.
Wharton Railway and River Salt Co., Winsford.
Wheelock Iron and Salt Co., Sandbach.
Williamson, R., Northwich.
Worthington, Wm., Exors., Northwich.
Victoria Salt Works Co., Northwich.
Yeoman, R. H., Middlewich.

STAFFORDSHIRE.

D. Chaplin, Shirleywich, Weston-on-Trent.
Weston Salt Co., Weston-on-Trent.

WORCESTERSHIRE.

Corbett, John, M.P., Stoke Prior.
Droitwich Salt Co.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and LOSS OF LIFE arising therefrom, in the portion of Mr. DICKINSON'S DISTRICT, consisting of NORTH and EAST LANCASHIRE, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875. Jan. 11	1	Bradford	Manchester	Bradford Colliery Co.	Thos. Isherwood	Coal Miner	33	Caught against a coupling whilst riding up the engine brow. Died 21st.	–	–	–	1	–
„ 12	2	Waterside	Eccleshill	Adam Bullough	S. Townsend	Ditto	20	Roof falling from between two slips	–	1	–	–	–
„ „	3	School, Yard	Over Hulton	Wm. Ford Hulton	John Hurst	Ditto	58	Roof falling. Died 27th	–	1	–	–	–
„ 20	4	Outwood	Manchester	Thos. Fletcher and Sons	Roger Roscoe Saml. Beckett	Dayman Coal Miner	38 67	Roof falling where a pack wall was being built to support the roof.	–	2	–	–	–
„ 30	5	Clifton Hall	Clifton	Andrew Knowles and Sons, Ld.	Robt. Hough	Dayman	35	A train of tub waggons drawn upon him by the pony as he was assisting with some timber.	–	–	–	1	–
Feb. 3	6	Rose Hill	Bolton	Saml. Scowcroft	Charles Wood	Sinker	35	Stone falling from side of shaft	–	–	1	–	–
„ 10	7	Linnyshaw	Worsley	Bridgewater Trust	John Partington	Coal Miner	50	Roof falling. Died 18th	–	1	–	–	–
„ 12	8	Arley, No. 2	Over Hulton	Wm. Ford Hulton	Wm. Platt	Proptaker	40	Roofstone falling as he was taking out props.	–	1	–	–	–
„ „	9	Lordsfield	Ashton-under-Lyne	Lordsfield Colliery Co.	John Smith	Coal Miner	29	Coal falling from the high side of a level which he was widening.	–	1	–	–	–
„ 16	10	Bradleyfold	Little Lever	Thos. Fletcher	Thos. Martin Wm. Grundy	Ditto Ditto	28 37	Clod falling as they were ripping the roof of a road and walling the lower side.	–	2	–	–	–
„ 18	11	School, Yard	Over Hulton	Wm. Ford Hulton	Jas. Grindrod	Ditto	22	Roof falling	–	1	–	–	–
„ 27	12	Tithebarn, No. 2	Over Darwen	Eccleshill Coal Co., Ld.	Hugh Stanton	Waggoner	12	Coal falling from the cage. Died 7th August.	–	–	1	–	–
„ „	13	Anderton Hall	Blackrod	Dewhurst, Hoyle, and Smethurst.	Moses Standing	Metalman	31	Stone falling. Died 6th March	–	1	–	–	–
Mar. 8	14	Wharton	Little Hulton	Fras. Charlton and Sons	Richd. Potter	Fireman	45	Roof falling as he was taking out a sprag. Died 23rd.	–	1	–	–	–
„ 22	15	Outwood	Manchester	Thos. Fletcher and Sons	Edw. Seddon	Coal Miner	51	Coal falling in 2 yards mine	–	1	–	–	–

List of the Fatal Accidents, &c.—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875.													
Apr. 2	16	Bower	Hollinwood	Messrs. Marland	Jos. Clough	Carter	—	Falling off the pit-bank whilst helping. Died 6th.	–	–	–	–	1
„ 14	17	Little Lever	Little Lever	Andrew Knowles and Sons, Ld.	Henry Knowles	Sawyer	65	Cut with a circular saw at the timber yard. Died 2nd June.	–	–	–	–	1
„ „	18	Wharton Hall	Little Hulton	Wharton Hall Colliery Co.	Thos. Green	Cager	24	Coal falling from a tub in uncaging. Died 17th.	–	–	1	–	–
„ 17	19	Bradford	Manchester	Bradford Colliery Co.	Richd. Spencer	Taker-off	13	Breakage of a coupling link causing tub waggons to run back upon him in the engine brow.	–	–	–	1	–
„ 24	20	Ashtonsfield, No. 1	Little Hulton	Bridgewater Trust	Henry Dawson	Ditto	12	Thrown from the arm of a gin by which he was attempting to lower a tub down a brow by it without the horse.	–	–	–	1	–
„ 26	21	Barrowshaw	Oldham	Lees and Mayall	John Buckley	Coal Miner	45	Inundation. Cutting through into old workings without boring in advance.	–	–	–	4	–
					John Broadbent	Ditto	35						
					Thos. Jones	Ditto	28						
					John Willy	Boy	15						
„ 27	22	Mosley Common	Tyldesley	Bridgewater Trust	James Smith	Labourer	57	Run down the shaft. His jumping into a bucket apparently jerked the arms of a hand capstan over the struts.	–	–	1	–	–
May 8	23	Scout Moor	Shuttleworth	Executrix of L. Duckworth	Thos. Lee	Waggoner	14	Crushed between the endless rope and a pulley in the mine.	–	–	–	1	–
„ 29	24	Towneley	Burnley	Brooks and Pickup	Thos. Peart	Coal Miner	47	Roof falling as he was taking out props. King Mine.	–	1	–	–	–
June 2	25	Rivin	Little Lever	Andrew Knowles and Sons, Ld.	Jas. Taylor	Ditto	33	Collision of cages worked with wire rope guides as they were descending.	–	–	2	–	–
					Wm. Barnes	Ditto	27						
„ „	26	Kersley	Kersley	Saml. Scowcroft	Jas. Stones	Ditto	42	Roof falling in his place. Cannel mine.	–	1	–	–	–
„ 14	27	Outwood	Manchester	Thos. Fletcher and Sons	Wm. Olive	Waller	28	Roof falling at the back of a pack wall, Doe Mine, whilst endeavouring to escape.	–	1	–	–	–

List of the Fatal Accidents, &c.—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875.													
June 15	28	Lovers Lane	Atherton	John Fletcher and others	Richd. Aldred	Coal Miner	48	Slipping into the cage race above the sump.	–	–	1	–	–
„ 16	29	Aspen	Oswaldtwisle	Thos. Simpson and Co.	Mark Duxbury	Ditto	28	Roof falling	–	1	–	–	–
„ 19	30	Turton Moor	Bolton	Turton Moor Coal and Fire-clay Co.	Edward Ward	Waggoner	14	Roof falling	–	1	–	–	–
„ 23	31	Manor	Kersley	Clifton and Kersley Coal Co.	John Julian	Coal Miner	18	Caught whilst trying to get on a train of full tubs when in motion in the engine brow.	–	–	–	1	–
July 6	32	Coppicefield	Worsley	Bridgewater Trust	Jas. Mullineux John Rushton Peter Morris	Ditto Ditto Ditto	54 54 50	Top bed of roof coal of the 7 feet mine falling as they were taking down the lower roof coal.	–	3	–	–	–
„ 8	33	Agecroft	Pendlebury	Andrew Knowles and Sons, Ld.	Thos. Clough	Ditto	40	Caught by tubs which were knocked by another one passing by. Died 25th.	–	–	–	1	–
„ 16	34	Bridgewater	Worsley	Bridgewater Trust	Thos. Duffey	Ditto	19	Caught in taking his full tub down a bay. Died 21st.	–	–	–	1	–
„ 22	35	Top Pit	Denton	Denton Colliery Co., Ld.	Robt. Pepper	Platelayer	43	Crushed by waggons against the bank walling. Died 25th.	–	–	–	–	1
„ 31	36	Stand Lane	Radcliffe	Stand Lane Colliery Co., Ld.	John Hampson	Dayman	62	Roof falling. 2 yards mine	–	1	–	–	–
Aug. 5	37	Martholme	Great Harwood	Great Harwood Colliery Co., Ld.	Jonn. Fleming John Standing	Fireman Assnt. do.	27 50	Suffocated by firedamp which they apparently ventured too far into whilst dislodging it at night.	–	–	–	2	–
„ 8	—	Stonehill	Farnworth	Roscow and Lord	Jas. Woodfield	Coal Miner	—	Died at Mancester Infirmary from roof falling, September 1874.	–	1	–	–	–
„ 9	38	Mill	Duxbury	Thos. Whittle	Jas. Heald Jas. Radcliffe	Ditto Waggoner	— 14	Explosion of firedamp. Heald died 19th, and Radcliffe 25th.	2	–	–	–	–
„ 11	39	Clifton Hall	Clifton	Andrew Knowles and Sons, Ld.	James Draper	Coal Miner	20	Roof coal falling	–	1	–	–	–
„ 17	40	Scot Lane, No. 7	Westhoughton	Wm. Woods and Son	John Metcalf	Metalman	—	Died to-day, having been slightly hurt by a coupling which he was taking out 19th May last.	–	–	–	1	–

List of the Fatal Accidents, &c.--*continued.*

Date	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875.													
Aug. 26	41	Moleside -	Accrington - -	Geo. Hargreaves and Co.	Jas. Hargreaves -	Dayman -	23	Roof falling whilst renewing couplings	–	1	–	–	–
Sept. 3	42	Bradford	Manchester - -	Bradford Colliery Co. -	Edwd. Stansfield -	Coal Miner	28	Roof falling in old workings where he was getting stone to build a pack wall. Died 6th.	–	1	–	–	–
„ 8	43	Lovers Lane -	Atherton - -	Fletcher, Burrows, and Co.	John Smith -	Ditto -	32	Coal falling, as he was taking it down, 5 feet mine.	–	1	–	–	–
„ 10	44	Bugle Horn -	Westhoughton -	United Co-operative Coal Mining Society, Ld.	Wm. Settle -	Ditto -	27	Coal falling during holing - -	–	1	–	–	–
„ 15	45	Kersley -	Kersley - - -	Saml. Scowcroft - -	Dd. Sheldon -	Sinker -	32	A missed shot going off as he was wrongfully undrilling it in the shaft.	–	–	–	1	–
„ 18	46	Towneley -	Burnley - - -	Brooks and Pickup -	John Bates - -	Labourer -	47	Caught by the upper end of a rope which slipped through the clams and went down the shaft as he was assisting a ropemaker at the Alice Pit.	–	–	1	–	–
Oct. 9	47	Pendlebury -	Pendlebury - -	Andw. Knowles and Sons, Ld.	James Barnes -	Coal Miner	50	Dirt falling in his place. Died 16th	–	1	–	–	–
„ 12	48	Crumbouke -	Atherton - -	Fletcher, Burrows, and Co.	Jos. Vestey -	Ditto -	24	Coal rolling off above his sprags. Died at Bolton.	–	1	–	–	–
Nov. 5	49	Hunt Clough -	Chadderton - -	Chamber Colliery Co. -	Wm. Blamey -	Sinker -	39	The hoppet, in which he was ascending, being drawn against the banking waggon, the signal having been misunderstood.	–	–	1	–	–
„ 15	50	Pendlebury -	Pendlebury - -	Andw. Knowles and Sons, Ld.	Edwd. Jones -	Coal Miner	57	Dirt and coal falling in his place -	–	1	–	–	–
„ 25	51	Duxbury -	Duxbury - -	Thos. Whittle - -	Giles Baxendale -	Ditto -	46	Roofstone falling - -	–	1	–	–	–
„ 27	52	Stand Lane -	Radcliffe - - -	Stand Lane Colliery Co., Ld.	John Haslam -	Manager -	47	A shot fired in a sinking pit blowing through to a tunnel in which they were standing, the arranged signal not being heard.	–	–	–	2	–
					James Anderton -	Sinker -	66						
Dec. 1	53	Moston -	Manchester - -	Moston Colliery Co., Ld. -	Wm. Mitchell -	Dayman -	51	Suffocation by blackdamp, in old workings which were being unwatered.	–	–	–	1	–

List of the Fatal Accidents, &c.—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875.													
Dec. 1	54	Towneley	Burnley	Brooks and Pickup	Jos. Ellershaw	Sinker	27	Breakage of rope holding a scaffold on which he and others were at work widening a shaft.	–	–	1	–	–
„ 3	55	Ditto	Ditto	Ditto	Thos. Wilton Hoskin	Coal Miner	23	Roofstone falling where he was widening a road.	–	1	–	–	–
„ „	56	Agecroft	Pendlebury	Andw. Knowles and Sons, Ld.	Robt. Thomas	Ditto	28	Roofstone falling between two props	–	1	–	–	–
„ 5	57	Outwood	Manchester	Thos. Fletcher and Sons	Isaac Whittle	Furnaceman	69	Suffocated at the furnace during the night, a part of the mine having got on fire.	–	–	–	1	–
„ 6	58	Victoria	Baxenden	Geo. Hargreaves and Co.	Dd. Grimshaw	Coal Miner	31	Roof falling where he was pillaring	–	1	–	–	–
„ 9	59	13 Three Quarters.	Over Hulton	Wm. Ford Hulton	Giles Worthington	Ditto	35	Stone falling from a slip in the roof of his place.	–	1	–	–	–
„ 11	60	Pendleton	Pendleton	Andw. Knowles and Sons, Ld.	Abraham Unsworth	Taker-off	18	Breakage of a jig brow rope let a tub run against him at the bottom.	–	–	–	1	–
„ „	61	Coppicefield	Worsley	Bridgewater Trust	Francis Lyon	Coal Miner	52	Roof coal falling, 7 feet mine	–	1	–	–	–
„ 18	62	Lee	Bacup	Thos. Leach	Jas. Wm. Bilberry	Ditto	18	Roofstone falling	–	1	–	–	–
„ 24	63	Bradford	Manchester	Bradford Colliery Co.	Wm. Winstanley	Ditto	59	Caught by getting into the cage at the bottom, after the signal had been given.	–	–	1	–	–
								Total at the North and East Lancashire Coal Mines, 63 accidents and 75 deaths	2	38	11	21	3

In addition to the foregoing the following fatal accidents connected with Coal Mines in the North and East Lancashire portion of the district, but not comprised by the Act, have come under notice :—

Feb. 7 James Hardman died from injuries received by coal falling in Stand Lane Colliery, Radcliffe, on the 23rd January 1874, but the death being more than a year and a day after the accident it is not comprised.

„ 12 A child, not employed, run over by a locomotive and train of waggons on the Wigan Co.'s Westleigh Colliery Railway.

May 27 Geo. Smith, a child 5 years of age, caught by tub waggons on a tramway.

At the Metalliferous Mines within the Coalfield of North and East Lancashire, also at those of Cheshire and Sussex, no fatal accident was reported for 1875.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and LOSS OF LIFE arising therefrom, in the portion of MR. DICKINSON'S DISTRICT, consisting of IRELAND, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875.													
Jan. 16	1	Cloneen -	Crettyard, Queen's County.	Wm. Shea - -	James Shea -	Waggoner -	14	Roof of the mine falling - -	–	1	–	–	–
May 20	2	Skehana Crop Pit.	Castlecomer, co. Kilkenny.	Henry Close and Mrs. Eliza Bradley.	Michl. Granger -	Coal Miner	—	Inundation of water from old workings which were approached without the required boring.	–	–	–	2	–
					Wm. Tynan -	Ditto -	—						
Nov. 16	3	Brackavill -	Coal-island, co. Tyrone	B. M'Callan and Co. -	Peter Carran -	Ditto -	—	Roof falling in his working place -	–	1	–	–	–
								Total at the Coal Mines of Ireland, 3 accidents and 4 deaths -	–	2	–	2	–

MINES CLASSED UNDER THE METALLIFEROUS MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and LOSS OF LIFE arising therefrom, in the portion of MR. DICKINSON'S DISTRICT, consisting of IRELAND, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.
1875.													
Jan. 3	1	Berehaven -	Allihies, co. Cork -	Berehaven Mining Co., Ld.	Jeremh. Leary -	Blacksmith	—	Breakage of the wire rope as he was being wound up the mountain mine shaft.	–	–	1	–	–
Feb. 8	2	Ditto -	Ditto - -	Ditto - -	Martin Byrne -	Trammer -	13	Caught by machinery at Doneen mine dressing floors, apparently as he was greasing wheels.	–	–	–	–	1
May 15	3	Ditto -	Ditto - -	Ditto - - -	Jas. Harrington -	Shaftman -	—	Failure of a screw as he and others were lifting about 3 tons weight of pumps.	–	–	1	–	–
June 1	4	Tigroney -	Ovoca, co. Wicklow -	Williams and Co. - -	Edwd. Byrne -	Miner -	36	Sulphur ore which he was taking down from the back of a working falling on him.	–	1	–	–	–
,, 10	5	Newtown Cromelin.	Co. Antrim - -	Antrim Iron Ore Co., Ld.	Hugh M'Cambridge	Ditto -	—	Roof falling in his working place -	–	1	–	–	–
Dec. 4	6	Clonwilliam Slate.	Wooden Bridge, co. Wicklow.	Clonwilliam Quarrying and School Slate Manufacturing Co., Ld.	Edwd. M'Donal -	Labourer -	25	Falling into the quarry from a tunnel leading to the mine shaft.	–	–	–	–	1
								Total at the Metalliferous Mines of Ireland, 6 accidents, and 6 deaths - - -	–	2	2	–	2

In addition to the foregoing the following fatal accident connected with a mine, but not apparently comprised by the Act, has come under notice, viz. :—Sept. 22nd, at Ruplagh Lead Mine, Seven Churches, co. Wicklow, a boy named Patrick Joy, $2\frac{1}{2}$ years of age, drawn against a horizontal winding pulley by a wire rope which he had caught hold of whilst playing.

I have the honour to be,
Sir,
Your very obedient Servant,
JOSEPH DICKINSON.

The Rt. Hon. R. A. Cross, M.P.,
Secretary of State,
Whitehall.

Mr. Evans' Report.

REPORT on "THE COAL MINES REGULATION ACT OF 1872," for the MIDLAND DISTRICT, comprising the Counties of Derby, Nottingham, Leicester, and Warwick. By THOMAS EVANS, Esq., F.G.S.

SIR, Pen-y-Bryn, Derby, 31st March 1876.

I HAVE the honour to lay before you this my Twentieth Annual Report on the working of the Act of Parliament for the Regulation and Inspection of Mines.

There is an increase in the quantity of coal raised during the year, and although the loss of life is greater than 1874, it is below the average of the past eight years.

Sixty-four separate notices of accidents "in and about" the coal mines of the district have been received during the year, and they have been attended with the loss of sixty-five lives. Each one is fully described in the Schedule accompanying this Report.

In making a comparison of the death rate it is desirable to take the average of time, and I find that during the twenty years ended December last the deaths were one for 127,740 tons of coal raised; and in 1875, one for 191,240 tons of coal raised.

The total quantity of coal worked in Great Britain during the year is 133,306,485 tons, and the deaths amount to 1,244, or one life for 108,918 tons; thus the Midland district compares favourably with the other twelve.

The following table shows a comparison for the years 1868 to 1875 :—

Date.	Tons of Coal raised.		Deaths.		Tons of Coal raised per Death.	
	In Great Britain.	In the Midland District.	In Great Britain.	In the Midland District.	In Great Britain.	In the Midland District.
1868 -	104,566,959	7,699,265	1,011	60	103,429	128,321
1869 -	108,003,482	8,100,000	1,116	78	96,777	103,846
1870 -	112,875,525	8,366,000	991	50	113,900	167,320
1871 -	117,439,251	9,252,900	1,075	93	109,246	99,494
1872 -	123,393,853	10,657,100	1,060	79	116,409	134,900
1873 -	128,544,400	11,533,307	1,069	78	129,843	147,837
1874 -	126,214,368	12,232,296	1,056	55	119,521	222,405
1875 -	133,306,485	12,430,600	1,224	65	108,918	191,240

The following are the Tables and Summaries generally given in my report:—

TABLE No. 2.

TABLE showing the Number of Deaths, the Coal raised, and the Number of Tons of Coal raised for each Death, during the 20 years ended 31st December 1875.

Dates.	Explosions of Gas.	Falls of Roof.	In Shafts.	Crushed by Tubs, and Miscellaneous Accidents.	Inundation of Water.	Boilers bursting.	Total.	Tons of Coal raised.	Tons of Coal raised for each Death.
1856	3	21	16	6	—	—	46	4,500,000	97,000
1857	15	14	6	20	—	—	55	4,750,000	86,000
1858	—	16	16	10	—	—	42	5,060,000	121,000
1859	2	18	13	7	—	—	40	5,460,000	136,500
1860	3	21	13	13	—	—	50	6,215,000	124,000
1861	3	21	15	7	23	—	69	6,503,319	94,000
1862	2	25	4	12	—	—	43	6,647,000	154,000
1863	4	26	9	8	5	—	52	7,000,000	134,000
1864	11	30	9	16	—	—	66	7,300,000	110,000
1865	9	36	13	24	—	—	82	7,575,000	92,383
1866	7	26	6	19	—	—	58	7,600,000	131,034
1867	4	25	11	24	—	—	64	7,600,000	118,750
1868	1	24	9	26	—	—	60	7,699,000	128,317
1869	6	31	12	21	4	4	78	8,100,000	103,846
1870	2	22	6	19	—	1	50	8,366,000	167,320
1871	42	31	5	15	—	—	93	9,252,900	99,494
1872	7	38	8	26	—	—	79	10,657,100	134,900
1873	4	39	10	25	—	—	78	11,533,307	147,837
1874	3	23	6	23	—	—	55	12,232,296	222,405
1875	1	26	17	21	—	—	65	12,430,600	191,240

TABLE No. 3.

SUMMARY of separate Colliery Accidents in the Midland District during the years 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, and 1875.

	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.
Explosions of fire-damp	2	1	5	1	5	7	4	3	1
Falls of roof	25	24	31	22	31	36	37	23	26
Shafts	11	9	11	6	5	8	10	6	16
Miscellaneous	21	24	23	18	15	23	24	20	21
Total accidents	59	58	70	47	56	74	75	52	64

SUMMARY OF LIVES LOST BY THE ACCIDENTS.

Explosions of fire-damp	4	1	6	2	42	7	4	3	1
Falls of roof	25	24	31	22	31	38	39	23	26
Shafts	11	9	12	6	5	8	10	6	17
Miscellaneous	24	26	29	20	15	26	25	23	21
Total deaths	64	60	78	50	93	79	78	55	65

Shafts.

	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.
Falling from surface and part way down	1	5	6	5	4	5	4	—	6
Things falling from surface	2	—	2	1	—	2	1	—	2
„ „ part way down	1	1	1	—	—	—	—	—	2
Ropes and chains breaking	—	1	—	—	—	—	—	2	—
Whilst ascending and descending	5	1	1	—	—	—	5	2	2
Explosion of powder	—	1	—	—	—	—	—	—	1
Overwinding	1	—	—	—	—	—	—	—	—
Suffocated in shaft	1	—	—	—	—	—	—	—	2
Fell under carriage at shaft bottom	—	—	1	—	—	—	—	—	1
Jammed against shaft side, pumps giving way	—	—	1	—	—	—	—	—	—
Drowned in sump	—	—	—	—	1	1	—	—	—
Falls whilst at pumps	—	—	—	—	—	—	—	2	—
Brick-work in the shaft gave way	—	—	—	—	—	—	—	—	1
Total	11	9	12	6	5	8	10	6	17

Miscellaneous.

Burnt by paraffine	—	—	—	—	—	—	—	—	1
Explosions of gunpowder	5	8	1	2	2	1	—	2	1
Suffocation by gases	1	2	—	5	—	—	2	3	—
On incline planes	2	7	6	3	3	9	8	6	1
By tubs and trams	12	5	7	3	7	8	9	8	11
Boilers bursting	3	—	4	1	—	—	—	—	—
Machinery underground	—	—	—	2	—	2	—	1	—
Machinery (on surface)	1	1	3	4	1	2	2	2	2
Run over „ „ or crushed between buffers	—	3	2	—	1	4	—	—	1
Kicked by a horse	—	—	1	—	—	—	2	—	1
Inundation	—	—	4	—	—	—	—	—	—
Drawn on to drum by a rope of an incline	—	—	1	—	—	—	—	—	—
Fall from building	—	—	—	—	1	—	—	—	—
Crushed by a rope on incline	—	—	—	—	—	—	1	—	—
Run over in crossing points	—	—	—	—	—	—	1	—	—
Door falling	—	—	—	—	—	—	—	1	—
age at pit bottom	—	—	—	—	—	—	—	—	3
Total	24	26	29	20	15	26	25	23	21

Ironstone Mines.

Two deaths are reported as having taken place in the ironstone and clay mines of the "coal measures." The first occurred on the 15th September at the Springwell Pit, Staveley. A miner was engaged in preparing to take down the roof stone when some timber gave way, and falling upon him caused instant death. He was an experienced miner and accustomed to this particular work.

The other took place on the 19th December at the "Woodville Clay Pit" under the following circumstances :—

A wire rope used for winding water out of the mine became detached from the drum and fell down the shaft. In drawing it up again, and whilst landing it on the stage, the men by some means let it slip from their hands, when deceased became entangled with it and was drawn down the pit and killed on the spot.

These mines are very shallow and roughly fitted up. Often the machinery is rude in construction and badly arranged.

Coal raised.

There is an increase of nearly 200,000 tons in the quantity of coal raised.

Persons Employed.

The number of persons employed in and about the mines is 52,477, as against 52,379 in the year 1874.

There are no young children under the age of 12 years employed underground; but between the age of 12 and 16, 5,590 are so employed, and over 16, 35,199. These statistics (the persons employed and the minerals wrought) are furnished by the owners or agents of the several mines, in accordance with the 38th section of "The Mines Regulation Act of 1872." They are confidential, and after obtaining the quantity of coal worked, and number of persons employed, the forms are destroyed; but the Secretary of State has power to "publish the aggregate results of returns with respect to any particular county or inspector's "district, or any large portion of a county, but the *individual return* shall not be published "without the consent of the person making the same, or of the owner of the mine to which "they relate, and no person except an inspector, or Secretary of State, shall be entitled, "without such consent, to see the same."

I believe that these returns of the quantity of coal raised and persons employed are now correctly made out, and the inspector of mines of the district is the only person who can judge of the correctness of them.

I have for many years past furnished the keeper of the mining records with the best information he could possibly obtain on this subject. There is now no further necessity for so doing, as he will be able to procure accurate statistics with regard to the coal raised by referring to the annual reports of the inspector of mines, which are published in ample time for the requirements of his mineral statistics.

The number of young persons under the age of 13 employed in and about the mines amounts to 859. Last year the number was 1,163, showing a decrease of over 300.

I think the general feeling of the district is not to employ children until they have arrived at the age of 13, thus affording an opportunity for education, which can be had at the schools established in almost every mining village.

Explosions of Gas.

There has been but one fatal explosion of gas during the year, and that was attended with the loss of one life.

It took place on the 3rd April at No. 6 Colliery belonging to the Clay Cross Coal and Iron Company.

It appears that John Butler, a collier employed in this mine, in going to his work lost his road, and went into a heading containing a small accumulation of fire-damp, which ignited at his naked light.

The entrance to this place ought to have been "fenced off" until such time as the deputy could have removed the gas by increasing the amount of air passing through the heading.

Falls of Roof.

Twenty-six deaths from "falls of roof" and "sides of working places" have taken place during the year. This is somewhat below the average of the past ten years, but still it remains the chief cause of accidents and loss of life in coal mines.

Many of them may be classed amongst preventible accidents; such, for instance, as "holing" without "spraggs;" working under the roof after being cautioned that it was dangerous, in consequence of the want of timber to support it; trying to pass in front of coal which had already been "holed," and the "spraggs" knocked out; and going into working places after a shot had been fired without properly examining the roof. And many of the workmen whose lives have been sacrificed through the causes mentioned have been experienced colliers, and cannot, therefore, be put down to incompetency. Accidents from falls will doubtless occur from time to time, but it is the duty of every person in charge to exercise proper supervision, so as to reduce them to a minimum, and I can only repeat what I have so often written and spoken about—that the safety of the miner is, to a very considerable extent, in his own hands, as on the skilful use of timber, and watchfulness, depend the security of the roof.

Shafts.

Sixteen fatal accidents, attended with a loss of 17 lives, in shafts have taken place during 1875. Two men were killed in attempting to get on to the cage whilst it was in motion. One a scaffold gave way. Two falling out of a cage in ascending. Three from loaded tubs, coals, and loose materials falling from the surface, in consequence of the tops of the shafts not being sufficiently protected. One man was killed by a descending cage being lowered upon him whilst he was in the sump. One by the falling in of the sides whilst engaged bricking. One man was killed and four others seriously injured in a sinking shaft at Linby. From

the evidence given at the coroner's inquest, it appeared that on the morning of the 16th of April the deceased and several other miners were working in a sinking shaft at the Linby New Colliery, and up to about half-past three o'clock they had been engaged drilling four holes to be charged with powder, for the purpose of blasting the floor. Immediately after the chargeman had lighted the fuse the men were brought to the surface. The banksman who stood at the pit top said he "heard four distinct explosions before the men had reached the top." They, however, remained on the surface 30 to 40 minutes, and soon after four o'clock they descended and continued to work for nearly an hour, when a misfired shot exploded, killing Joseph Bailey.

It is clear that the banksman must have been mistaken, and he could not have heard more than three separate explosions, for it was seen that the fuse communicating with the fourth shot was damaged, and smouldered until it was accidentally relieved by one of the men whilst pinching a stone which pressed against it.

This accident is scarcely within the control of the manager; the only suggestion I had to make was that a sufficient interval of time should be allowed between each shot, so that the actual number of explosions could be correctly ascertained.

Two men were suffocated by noxious gases in separate shafts. The first at Cutthorpe Colliery. Hoskins, a miner, descended a sinking shaft without a light; he had many times previously been cautioned not to do so. He, however, fell a victim to his own recklessness.

The other one took place on the 22nd October at Oakerthorpe. The deceased was descending an old shaft (which was being cleaned out), and was soon overcome by the accumulated gas, and fell to the bottom before any assistance could be given. This was also the result of thoughtlessness on the part of the deceased, who ought to have known that in all probability gas was there to be found, and by lowering a light would have ascertained the presence of "*choke-damp*."

One man was killed at the Albert Colliery. The winding shaft through which the men descend and ascend is also used as the upcast, and at or near the bottom there is a furnace of considerable dimensions. The shaft is fitted up with wooden guides, but in consequence of the great heat it is found difficult to keep them in repair and safe to conduct the cage.

On the morning of the 6th of December several men were being lowered, when the cage which the men were in suddenly left the guides, and landed on the top of the ascending cage. Thomas Sims was killed, and the others more or less injured.

An inquest on the body of the deceased was held by the county coroner, C. S. B. Busby, Esq., when the following verdict was returned:—"We say that there was great negligence on "the part of the manager in not having the guides properly examined, and they are also of "opinion that the company had not exercised due diligence in the construction of the fan."

I must here state that I had written many times, and frequently pointed out the danger (to the owners and managers) of allowing men to pass through this shaft; and they have since this accident completed the erection of a ventilating fan on the surface, near the pumping shaft. The ventilation is consequently reversed, the men now using the "down-cast" shaft as a means of ingress and egress. This ought to have been done years ago.

Two men met with their death in a sinking shaft at Pleasley. On the morning of the 20th of October, Benjamin Doxey, master chargeman, and two miners had been engaged in drilling two holes for the purpose of blasting the floor, and after charging them with powder, Doxey desired the two men to get quickly into the tub; they did so, and directly after he lighted the fuse and jumped into the tub. A signal was given to "wind up" and the engine-man obeying the signal, as was his duty, started the engine, and from the evidence it would appear that no time was given to steady the load, which is absolutely necessary in sinking shafts. The tub began to swing from one side of the shaft to the other, and continued to do so until it came in violent contact with the pump stays, when the handle broke, tipped the three men out, and they fell to the bottom. Two of them were instantly killed, and the other miraculously escaped with his life, but not without very serious injury. In this case, in my opinion the only person to blame was the unfortunate man *master chargeman*, for it was his duty to see that the tub was steadied before giving the final signal to "wind up."

Explosions of Powder underground.

At the Wollaton Colliery, on the 30th of September, John Bostock, a collier, had lighted a shot to bring down some coal, and as no explosion took place after the usual lapse of time, deceased asked a fellow-workman if he must drill the hole again. He replied "No." But it seems from the evidence given before the coroner that deceased did drill the same hole again, when the shot exploded; thus paying with his life the penalty of non-compliance with the regulations and rules provided for the use of powder.

Trams and Tubs.

Twelve lives were lost by tubs and trams, and on inclined planes. Many of them were caused by the dangerous practice which prevails in many collieries of allowing boys to place themselves before loaded tubs for the purpose of bringing them down steep places; they become overpowered by the increasing weight and velocity, and, falling in front of the trams, not unfrequently meet with instant death. Fractured arms, legs, and other serious accidents are constantly reported from this cause.

Riding on full tubs is also a source of danger, and two deaths resulted from so doing this year.

Miscellaneous.

At the Blackwell Colliery, on the 4th of December, a boy was fatally burned by setting fire to paraffine oil, when he was in the act of filling the lamp whilst the wick was burning.

I consider that this is a practice attended with danger, allowing persons to fill their lamp in the mine with such volatile oil. There should be a place on the surface under the control of a properly appointed person, whose duty it should be to attend to and refill these lamps.

On the Surface.

Three deaths have taken place. One was crushed by a railway waggon, another was kicked by a horse, and a third whilst passing near to some "spur gearing" his clothes were caught by the wheels, and he was dragged in between the teeth and killed on the spot.

Complaints of Workmen.

I have as usual investigated every complaint sent me by colliers and others, and have occasionally found their statements to be correct, and when brought to the knowledge of the owners or managers, proper attention has in every case been given to my suggestions.

The power given the men by the 30th section of the 35 & 36 Vict., cap. 76, to appoint two of their number to inspect the mine, and report the result of such inspection in a book kept at the colliery office, is seldom put in force, and this is much to be regretted, as by so doing they would render valuable assistance to the managers as well as to the inspectors of mines.

In cases where the powers have been exercised much good has resulted therefrom.

Safety Lamps and Blasting Powder.

Much has been said of late on the use of blasting powder in mines *where safety lamps are used.* With respect to this district, I am decidedly of opinion that the suggestions made by some, "that if gas is *once* seen in a mine safety lamps must *always* be used, and the use of powder discontinued," would be attended with very serious consequences. Secondly, if it is made compulsory by law to discontinue the use of blasting powder in every colliery where safety lamps are used, it would prevent the introduction of lamps as an extra precaution, and in some of the thin mines now worked with lamps they would have to return to the old system of naked lights, as without powder practically they cannot be worked.

If a coal mine is in such a condition under *ordinary circumstances* as to be dangerous to exhibit a naked light, blasting ought no doubt to be discontinued, and it is already provided by the "General Rule 8, sub-section 2, That if the said inflammable gas issued so freely "that it showed a blue flame on the cap of the safety lamp, it shall only be used when the "persons ordinarily employed in the mine are out of the mine, or out of the part of the "mine where it is used." And again, if the use of powder is considered dangerous by the inspector of mines, and is not already provided against by any express provisions of the Act, or by the "Special Rules," he can, if in his opinion its use threatens or tends to the bodily injury of the persons employed, give notice in writing thereof to the owner, agent, or manager, and if they object to remedy the matter complained of, it shall be determined by arbitration, as provided for by the 49th section of this Act.

The late deplorable explosions of gas which have resulted in so great a sacrifice of human life, and have so properly excited the public mind, have in my opinion resulted, not from the use of powder, but from the violation of the first "General Rule," which enacts that "an adequate amount of ventilation shall be constantly produced in every mine, to dilute "and render harmless noxious gases to such an extent that the working places of the shafts, "levels, stables, and workings of such mine, and the travelling roads to and from such

"working places, shall be in a fit state for working and passing therein." And the Court of Queen's Bench, in the case Brough *v.* Humphrey: the Judges said, "The rule is not "confined to the ventilation of the working places and travelling roads, but requires that "so much of the mine must be kept ventilated as to render the working places and travelling "roads safe."

It is within my knowledge that up to the present time the powers given under the sections before referred to have never been put in full force, and before any alteration is made in the law would it not be desirable to test its efficiency.

It is perfectly clear from the evidence given at the inquest on the bodies of the men killed at the Swathe Main Colliery, that powder had nothing whatever to do with the cause of the terrible catastrophe; and is it not better that the real causes of these explosions should be made known than that the public feeling should be led away by such statements as are frequently made, "that it was the result of a *blower of gas*, a *fall of the roof*, a *door being left open*, or a *shot having fired?*"

I wish it to be clearly understood that in mines such as the Barnsley and Silkstone, which cannot, it is said, be worked with naked lights (and especially as the coal is 8 feet thick), the use of powder should be strictly prohibited. I also am of opinion that it would be better that each inspector's district should be dealt with according to the particular circumstances of the case.

"Bunkers Hill Explosion.

"SIR, "Whitehall, 2nd June 1875.

"I AM directed by Mr. Secretary Cross to transmit to you the enclosed copy of a "Report upon the Bunkers Hill Colliery explosion, and to request that he may be furnished "with your remarks thereon at your earliest convenience.

"I am, &c.,

"Thomas Evans, Esq., (Signed) A. F. O. LIDDELL.
"Inspector of Mines."

As no written statement *of my own* of the remarks which I made on the Bunkers Hill explosion, especially as regards the responsibility and use of blasting powder in fiery mines, has been recorded, I take this opportunity of stating that in my opinion the responsibility of conducting all safety regulations in and about the mine rests with the owner, agent, and manager, and they are the fit and proper persons to decide on the mode of lighting the mine, and the use of powder. If, however, the inspector of the district is of opinion that the lighting or the use of powder is attended with danger, so as in his opinion to "threaten or tend to the bodily injury of any person employed in the mine," it is his duty to put in force the clauses of the Mines Act before referred to in this report.

Board for the Appointment of Examiners.

The following gentlemen constitute the Board for the appointment of examiners:—

Colliery Owners	Charles Seely, Esq., Sherwood Lodge, Notts. (Chairman). F. B. Wright, Esq., Aldecar Hall, Derby. George Skey, Esq., Tamworth.
Mining Engineers, &c. &c.	Charles Binns, Esq., Clay Cross Hall. J. T. Woodhouse, Esq., Overseal. George Vaughan, Esq., Snibstone.
Three persons not being Owners, Agents, &c. of mines.	Mr. Paxton, Eastwood. Mr. Davis, Clay Cross. Mr. Matthews, Langley Mill.
Her Majesty's Inspector of Mines.	Thomas Evans, Esq., Derby.

Examiners.

Examiners	John Thomas Woodhouse, Esq., Overseal. J. P. Jackson, Esq., Stubbing Edge, Derbyshire. R. Smallman, Esq., Nuneaton.
Secretary	William Saunders, Esq., Secretary, Wardwick, Derby.

The examination, as at present arranged, will take place at Derby in the month of October in each year.

Managers.

Every mine shall in accordance with the 26th section of the Mines Act be under the control and daily supervision of a manager; and a person shall not be qualified to be a manager of

a mine employing more than 30 persons, &c., unless for the time being he is the holder of a certificate of service or competency.

Certificates of competency are given to such persons as shall qualify themselves by passing an examination conducted by three gentlemen appointed by a board consisting of 10 persons, three persons being owners of mines, three persons employed in or about the mine, three persons acting as mining engineers, agents, or managers, and the inspector of mines of the district (section 27).

There appears to be a difference of opinion as to the person or persons entitled to a certificate of service under this Act. To my mind there is no doubt the manager of a mine is the person who has the supervision and control of the above as well as the underground works; he who controls the expenditure of money, and not the underlooker, overman, or bailiff.

The viewer or manager is the proper person to hold a certificate. It cannot be expected that the underlooker, the deputy, can satisfy many of the duties and requirements laid down in the Mines Act, and be liable to a penalty of 100*l.* (section 32, sub-section 7).

I find in a circular letter from the Home Office, dated 28th November 1872, the following interpretation:—"In the opinion of Mr. Bruce, the person under whose 'control and daily "supervision' the 'mine' as defined by the Act may most properly be said to be is the *viewer* "or *underviewer*, and not the underlooker or undergronnd overman. Accordingly certificates "will be granted, &c., but not to underlookers, underground overmen, who cannot be "deemed to have acted in the capacity of manager of mines within the terms of the Act."

The colliery owners of this district, with a view of settling this point, laid the Act of Parliament before three eminent counsel, and the following is their opinion:—

"We have carefully considered the numerous provisions of the Act relating to the duties to be performed by the manager to be appointed under the Act. The Act is undoubtedly a very difficult one to construe, but upon the best consideration we can give to it, we are of opinion that the manager, in order to be able to perform the duties cast upon him, must have very extensive and ample powers touching the entire concern both above ground and below ground. The owner or agent will be superior to him, because the owner if and when interfering in the concern, and the agent as representing him when not personally acting, and standing as it were on the same level with him, are persons who can absolutely control the very existence or continuance of the business. The manager not being owner, nor acting in the very stead of an owner, will be responsible and inferior to them; but otherwise, and in his general direction of the working of the whole concern both above and below ground, he must be very little, if anything, short of a commander-in-chief. We think this results from the nature of the duties and responsibilities cast upon him.

"In considering what class of persons are entitled under the 31st section of the Act to certificate of service, as having already 'acted in the capacity of a manager of a mine,' it is impossible to discard the foregoing result. As many of the duties now thrown upon the managers to be appointed are new, we do not think that such persons need by any means be of exactly the same type and class as the managers of the future will be or become, but we think they must be persons who have performed duties in some considerable degree analogous to the more important functions, at any rate, of the managers under the Act. And we think in particular that they ought to be persons who have had some kind of general superintendence above ground as well as below ground. It seems impossible to us to suppose, for instance, that it can be intended that a person understanding machinery, but ignorant, we will say, of the very principle of underground ventilation, should be qualified by certificate of service to act as manager under the Act, and become responsible for the effective ventilation of the pit; or that a person skilled in underground work, and utterly ignorant of everything relating to machinery, should be qualified by certificate of service to take the direction and control of the machinery upon which the lives of those going up and down the shaft daily depend. We think, therefore, that the underviewers cannot be the class of persons entitled to certificates of service. We think they fail in two respects at least. 1st, that they have had nothing to do with work above ground; 2nd, that they have not the kind of knowledge and experience below ground which can fit them for the serious responsibility of planning and carrying out the necessary arrangements for the ventilation and safe working of the mines. The viewers appear to us to answer much more nearly to the class of persons entitled to certificates of service. Such persons we are satisfied must be of a much more educated class than the underviewers can be.

"Another important and difficult question put to us is, what is the nature of the 'daily supervision' required of the manager by section 26? We do not think it necessarily involves the daily inspection of all parts above ground and under ground by the manager. So to hold would be to defeat the very objects of the Act, as the mere physical labour often involved would unfit the manager for the thought and headwork involved in effective supervision of a

higher kind; and we think the mine is under his daily supervision if he effectively informs himself day by day of what is going on all over it, through the reports of his subordinates in the various departments. But we think no daily supervision can be efficient unless the manager is so within call day by day that he can be speedily appealed to in cases of emergency, nor unless it is at least physically impossible that at some time or other in the day he can visit any part of the premises above or below ground, where his presence may be really needed. It seems to us, for example, that in the instance of the Sheepbridge Collieries mentioned in the instructions, it would be hardly possible for a person resident where Mr. Wilde now lives to act as manager for the pit nine miles off, and that any one assuming so to do would incur very serious and dangerous responsibilities.

"William Field, Q.C.
"Hardinge J. Giffard, Q.C.
"Inner Temple, December 1872." "Alfred Wills, Q.C.

The following persons have been convicted for offences against the Mines Act during the year 1875:—

Mr. Gosling, Eckington.
Mr. Sheard, Dronfield.
Mr. Fearn, Chesterfield (Overseal Colliery).
Mr. Hendy, Overseal.
Mr. Hall, Digby.
Mr. Richards, Hasland, Industrial Co-operative Company.
Mr. Hicks, Tapton, Chesterfield.
Mr. Randolph Mellor, Hockley Hall Colliery, Tamworth.

Disqualification of Justices.

"A person who is the owner, agent, or manager of a mine to which the Mines Act applies, "or the father, son, or brother of such owner, agent, or manager, shall not act as a court, "or member of a court, of summary jurisdiction in respect of any offence under this "Act." (Section 67.)

Very much difficulty is experienced at several of the petty sessional divisions in consequence of the prohibition of the aforesaid magistrates adjudicating under this Act. Cases have been adjourned from petty session to session in consequence of the impossibility, in mining countries like these, of getting magistrates who are unconnected with collieries; and as colliery owners are disqualified, I think that the appointment of a stipendiary magistrate is the best way of meeting the case.

In the Chesterfield division, one of the great centres of this district, there are only two gentlemen qualified to hear mining cases.

The Queen v. *Randolph Mellor.*

In my Report for the year ending 1874, I briefly referred to the proceedings which were then being taken against Mr. Randolph Mellor, of 29, Martin's Lane, London, agent to the Hockley Hall Colliery Company, "Limited."

He was summoned before the magistrates at Tamworth for certain violations of the Coal Mines Regulation Act, and the justices, without hearing any evidence, dismissed the summonses on a point of law raised by the counsel for the defence.

A case was granted for the opinion of the Court of Queen's Bench, and it was heard on the 20th day of November 1875, before Justices Blackburn, Mellor, and Quain. Mr. Dugdale apeared as counsel for the prosecution, and after hearing the arguments, "It is ordered "that this case be remitted to the justices who stated and signed the same, with the opinion "of this Court that their judgment or determination upon hearing of an information "or complaint prepared by the said prosecutor against the said Randolph Mellor, under "section 51 of the Coal Mines Regulation Act of 1872, in respect of which this case has "been stated, was erroneous."

An opinion was expressed by the judges that it was perfectly clear that the defendant was an agent, and liable to be proceeded against, and they could not imagine what made the magistrates find otherwise. Mr. Mellor, the said agent, appeared before the justices at Tamworth on the 5th January last, pleaded guilty to the facts, and was mulct in penalties and costs.

This is a case stated by Justices, under the provisions of 20 & 21 Vict. c. 43.

1. On the 9th day of November 1874, an information under the 51st section of the Coal Mines Regulation Act, 1872, was duly preferred by Arthur Henry Stokes, acting inspector of mines for Mr. Evans, inspector of the district, against T. Randolph Mellor, which said information was as follows:—

"County of Warwick } "The information of Arthur Henry Stokes, of Derby, in the county of
to wit. } "Derby, inspector of mines, assistant in the Midland district, taken before
"me, the undersigned, one of Her Majesty's justices of the peace in and for the said county of
"Warwick, this 9th day of November 1874, who saith that T. Randolph Mellor, of No. 29, St. Martin's
"Lane, London, civil engineer, on the 7th day of October 1874, then being the agent of a certain
"mine or colliery situate in the parish of Kingsbury, in the said county of Warwick, in which said
"mine or colliery two shifts of workmen were then being employed once in every 24 hours, and in
"which inflammable gas had been found within the preceding 12 months, did then and there neglect
"and omit to appoint or cause to be appointed a competent person or competent persons for the
"purpose, who should once in every 12 hours, and before the time for commencing work in any part
"of the said mine or colliery, inspect with a safety lamp that part of the mine or colliery and the
"roadways leading thereto, and make a true report of the condition thereof so far as ventilation
"was concerned, such report to be recorded without delay in a book which should be kept at the said
"mine or colliery for the purpose, and be signed by the person making the same, contrary to the
"statute in such case made and provided."

2. In pursuance of a summons founded on and setting out the said information in the terms of the said information, the parties attended before us, the undersigned, two of Her Majesty's justices of the peace, acting in and for the said county, on the 19th day of November last.

3. The mine or colliery mentioned in the said information is the property of the Hockley Hall Colliery Company, Limited, and is worked by them, and the defendant is the managing director of the said company and engineer. He resides in London, and performs his duties as such managing director, principally at the London office of the company, 29, St. Martin's Lane, E.C., acting under the orders of the Board, but whenever occasion requires and he is requested by the directors, he attends and visits the colliery. The defendant appoints and is superior to the manager, who is appointed by the Board, or sometimes by the agent himself, acting on and in pursuance of a resolution of the Board. He has as engineer the general care and supervision of the mine; all matters connected with the working of which are managed by a certificated manager, whose duty it is, and when there is no certificated manager it is the duty of the defendant, to make all such reports and communications to the Government inspector of mines for the district as are required by the said Coal Mines Regulation Act.

4. The office of manager at the said mine was vacant at the date of the said information, and the following correspondence in respect thereof passed between the defendant and the Government nspector of mines for the district:—

"London Office,
"29, Martin's Lane, E.C.

"Thomas Evans, Esq.,
"Her Majesty's Inspector of Mines,
"Derby.

Hockley Hall Collieries, Limited,
Tamworth, 3rd Nov. 1874.

"DEAR SIR,

"I have to inform you that Mr. William Cowen has ceased to be the manager of these "collieries, and that Mr. Richard Clay has this day been appointed manager in Mr. Cowen's place.

"Yours faithfully,
"(Signed) T. RANDOLPH MELLOR,
"Managing Director."

"Hockley Hall Collieries, Limited,
"29, Martin's Lane,
"Cannon Street, London,
"7th November 1874.

"DEAR SIR,

"Mr. Richard Clay, our manager, holds a certificate of competency which he has obtained at "the Lancashire District Examinations.

"I note that the summons will be heard on the 19th.

"Yours faithfully,
(Signed) T. RANDOLPH MELLOR.

"Thomas Evans, Esq.,
"H.M. Inspector of Mines."

"Thomas Evans, Esq.

"Hockley Hall Collieries, Limited,
Tamworth, 13th November 1874.

"DEAR SIR,

"On my arrival at the colliery this afternoon at 4 o'clock, I was informed by Richard Clay, "the man whom I appointed manager of these mines, as per my letter to you of the 3rd instant, that he "had told me a lie in regard to his having a certificate, in fact that he had not got a certificate at all. "This is very unfortunate, for, acting in perfect good faith on his telling me that he had a certificate, "I appointed him, and also replied to your inquiry when you wrote to me at London on the 6th "or 7th.

"This will render it now necessary for me to appoint Mr. Bradley temporary manager as on a "former occasion, which had your approval, and which will now, I hope, meet with your acquiescence.

"I have not yet received any summons as named in your letter, and up to this moment I am unaware "what information is laid against me, and as you state the 19th instant is the day appointed for hearing, "I shall be at a disadvantage in not having time to answer fairly.

"I am informed that our late manager intends to plead that I have in some way interfered with him "in the discharge of his duties. This is quite untrue, as I shall prove when the time arrives.

"Our sole reason for dispensing with his services was guilty of neglect and insubordination.

"I am,

"Yours faithfully,

"(Signed) T. RANDOLPH MELLOR."

5. On the hearing of the summons a preliminary objection was raised by the counsel for the defendant that the defendant as such managing director was not within the meaning of the said Coal Mines Regulation Act, 1872, liable to be convicted by us of the offence charged in the said information and summons.

6. The attorney for the informant contended that the defendant was acting as an agent on behalf of the owner, having care or direction of the mine, or of some part thereof, and was responsible as an agent within the meaning of the 60th section of the said Coal Mines Regulation Act, regard being had to the interpretation of the words "mine" and "agent" in the 72nd section of the said Act.

7. After hearing the arguments on both sides, we determined and adjudged that in point of law Mr. Mellor, the defendant, has not been proved to be an agent within the meaning of the said Coal Mines Regulation Act, and we accordingly dismissed the summons.

8. The informant thereupon being dissatisfied with our decision in point of law, applied for a case to the Court of Queen's Bench on the point, which we granted.

The question for the opinion of the Court is whether the defendant on the state of the facts aforesaid was an agent within the meaning of the said Coal Mines Regulation Act, and liable to be proceeded against, then our decision dismissing the case is to stand; if on the contrary the Court should be of opinion that the defendant is an agent and liable to be proceeded against under the said Coal Mines Regulation Act, then the case is to be remitted to us to hear the facts and determine on the merits whether the offence charged in the said information has been committed or not.

Dated this 5th day of June 1875.

(Signed) FRAS. WILLINGTON, T. E. PRICE, } Justices.

TABLE No. 4.

TOTAL Number of DEATHS in the different COLLIERIES in the years 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, and 1875.

Name of Colliery.	Owner's Name.	Total Deaths in 11 years.
Clay Cross	Sir Wm. Jackson & Co.	55
Butterley	Butterley Iron and Coal Company	53
Staveley	Staveley Coal and Iron Company	53
Renishaw Park, &c.	J. and G. Wells	36
High Park, Eastwood, &c.	Barber, Walker, & Co.	32
Cinderhill, Newcastle, &c.	Babbington Coal Company	26
Norwood, Sheepbridge, &c.	Sheepbridge Coal and Iron Company	25
Swannington and Coleorton	Walker and Worswick	23
Bretby	Countess of Chesterfield	21
Birley Vale	Jeffcock and Dunn	18
Whitwick and Ibstock	W. Whetstone & Co.	17
Butcher Wood and Pleasley	Stanton Iron Company	15
Moira	E. Abney Hastings	15
Riddings	James Oakes & Co.	14
Snibston	G. R. Stevenson & Co.	13
Swadlincote, Cadley Hill	Hall and Boardman	12
Shipley	E. M. Mundy	12
Tapton	Tapton Coal Company	12
Stanton	J. & N. Nadin & Co.	11
Tibshelf and New Birchwood	C. Seeley & Co.	11
Hawkesbury	J. Darlington & Co.	10
Pilsley	Pilsley Colliery Company	10
Shirland	Shirland Colliery Co.	10
Shireoaks and Steethley	Shireoaks Colliery Company, Limited	10
Glascote	Firmstone and Co.	9
Derbyshire Silkstone	Derbyshire Silkstone Colliery Company	9
Swanwick	C. R. P. Morewood	9
Hucknall Torkard	E. Ellis & Co.	9
Wingerworth	Wingerworth Coal Company	8
Pinxton	Coke & Co.	8
Grassmoor	Barnes Brothers	8

Name of Colliery.	Owner's Name.	Total Deaths in 11 years.
Charity	Addenbrooke & Co.	8
Granville	Granville Colliery Company	6
Denby	W. D. Lowe	6
Oakerthorpe	George Pearson & Co.	6
Clifton	Saul Isaac, M.P.	6
Victoria	— Troughton	5
Molyneux	Eastwood, Swingler, & Co.	5
Annesley	Executors of William Worswick	5
Brampton	Knowles, Wright, & Co.	5
Baddesley	W. S. Dugdale	5
Renishaw	Boythorpe Co.	5
Unstone	H. Rangeley and Son	5
Blackwell	Blackwell Colliery Co.	5
Gresley Wood	Gresley Wood Colliery Company	4
Tibshelf and Blackwell	E. Chambers	4
Pooley Hall	Pooley Hall Colliery Company	4
Wilnecote	Perrins & Harrison	4
Skegby	Skegby Coal and Brick Company	4
Hill Top and Berristow Lane	G. Small & Co.	4
Netherseal	Netherseal Coal Company	4
Mapperley	Glendon Iron Company	4
Stockingford	Stockingford Colliery Company	3
Digby	Digby Colliery Company	3
Haunch Wood	Nowell & Son	3
Denby and Ryefield	Denby Iron Company	3
Foxley Oaks	Whittington Colliery Company	3
Kilbourne	Geo. and Thos. Small	3
Unstone	Unstone Coal Company	3
Bestwood	Bestwood Coal Company	3
Tame Valley	G. Skey & Co.	2
New Whittington	John Stapleton	2
Newbold	Newbold Iron Company	2
Compstall	G. Andrews and Company	2
Old Swadlincote	Church and Maples	2
Exhall	E. Wilson	2
Axedge	Buxton Lime Company	2
Summerley, &c.	James Rhodes and Son	2
Griff	C. N. Newdegate, M.P.	2
Birch Coppice	Morris & Shaw	2
Wyken	Wyken Colliery Co.	2
Nailstone	J. J. Ellis	2
Linby	Linby Coal Company	2
Ansley Hall, Warwickshire	Ansley Hall Coal Company	2
Woodhouse	Booker & Co.	1
Nuneaton New	Nuneaton New Colliery Company	1
Alton	Limited Co.	1
West Staveley	T. Hill	1
Sutton	Executors of Richard Arkwright	1
Plumbley	John Rhodes	1
Boythorpe	Boythorpe Colliery Company	1
Birch Vale	Bennett & Son	1
West Hallam	F. Newdegate	1
Rutland	Rutland Colliery Company	1
Digby and Giltbrook	Digby Colliery Company	1
Bagworth	Bagworth Coal Company	1
Danesmoor	Smith and Shepherd	1
Bridgehouse	J. Sayer	1
Owlcote	Galloway & Co.	1
Stonyford	J. Woolley	1
Burned Edge	L. & E. Hall	1
Stapleford	Stapleford Colliery Company	1
Wingfield Lane	Samuel Lowe	1
West Hallam	A. Whitehouse & Co.	1
Ilkeston	Ilkeston Coal Company	1
Shipley Gate	Bentley & Pounder	1
Fernilee	W. Proctor	1
Donisthorpe	Checkland and Williams	1
Peacock	Shorthouse and Gregory	1
Culthorpe	Hoskin & Co.	1
Awsworth	Awsworth Iron Company	1
Wollaton	Wollaton Coal Company	1
Woodville	Barry & Co.	1

List of Underground Colliery Explosions in the Midland District during the Year 1875.

Date.	Name and Situation of the Colliery.	No. of Persons Injured.		Remarks.
		Non-Fatal.	Fatal.	
1875.				
Jan. 23	Mapperley, Ilkeston	2	—	Cutting down roof. Coal in the goaf.
„ 25	Stanton, Burton-on-Trent	1	—	After leaving the heading for an hour returned to work; gas had accumulated.
Feb. 22	No. 7, Clay Cross, Chesterfield	2	—	Insufficient ventilation in heading.
„ 27	No. 6, Clay Cross, Chesterfield	—	1	Heading unventilated; deceased lost his road.
Mar. 6	Hill House, Whittington, near Chesterfield	2	—	Taking naked light into the goaf.
„ 26	No. 7, Clay Cross, Chesterfield	1	—	Heading being driven without any means of ventilating it.
„ 29	Pentrich, Ripley	—	—	No persons in the mine; gas fired at the furnace.
April 7	Campbell, Staveley	1	—	Place insufficiently fenced off; person went in for tools.
„ 12	New Deep, Riddings, Alfreton	1	—	Pack at end of wind-way left down, the air passing through the goaf instead of being carried up to the face.
„ 30	Ormonde, Ripley	1	—	Ventilation inadequate in heading.
June 26	Tupton, Wingerworth, Chesterfield	1	—	Insufficient ventilation.
July 2	Tunnel Pit, Riddings, Alfreton	1	—	Removed air sheeting at gate and lip.
„ 16	Hartshay, Ripley	1	—	Insufficient ventilation.
„ 20	Hundall, Chesterfield	2	—	Place known to be dangerous, but not fenced off. Unventilated.
„ 21	Donisthorpe, Moira, Checkland	1	—	Fall of roof in the goaf forced the gas out on to naked lights.
Aug. 12	Digby, Eastwood, Nottingham	1	—	Insufficient ventilation.
„ 25	Netherseal, Burton-on-Trent	1	—	Heading unfenced. Ventilation inadequate.
„ 30	No. 5, Clay Cross, Chesterfield	1	—	Neglect of fireman to examine the place before the men went to work.
Sept. 13	Church Gresley, Burton-on-Trent	—	—	No one injured.
„ 20	Birch Coppice, Tamworth	1	—	Insufficient ventilation.
„ 21	Donisthorpe, Moira	3	—	Men had been working with lamps within four days previous to the explosion.
Dec. 2	Grassmoor, Chesterfield	1	—	Insufficient ventilation in heading.
	Total deaths by explosions	—	1	
	Total injured by explosions	25	—	

TABLE No. 5.

Showing the Deaths that have taken place from Falls of Roof at the under-mentioned Collieries in the years 1867–75.

Name of Colliery.	Owner's Name.	Deaths.									
		1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Clay Cross	Sir W. Jackson, Bart., & Co.	3	3	2	4	3	4	1	1	—	21
Butterley	Butterley Iron and Coal Co.	6	1	2	1	3	1	1	1	1	17
Staveley	Staveley Iron and Coal Co.	3	3	1	1	3	2	3	1	1	18
Swannington	Walker and Worswick	—	3	2	1	1	2	—	—	—	9
High Park, Eastwood.	Barber, Walker, & Co.	—	3	2	—	1	—	3	2	4	15
Sheepbridge	Sheepbridge Coal & Iron Co.	—	3	1	1	—	2	—	1	2	10
Bretby	Countess of Chesterfield	—	—	1	1	1	2	2	—	2	9
Shipley	E. M. Mundy	—	—	3	—	1	1	1	—	—	6
Cinderhill, Newcastle, &c.	Babbington Coal Co.	2	—	—	1	1	2	—	—	2	8

Name of Colliery.	Owner's Name.	Deaths.									
		1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Whitwick	Whitwick Co.	—	1	—	1	4	—	—	—	1	7
Swadlincote	Hall and Boardman	1	—	2	—	1	—	1	—	—	5
Shirland	Shirland Colliery Co.	1	—	—	—	1	2	1	1	—	6
Butcher Wood, Silverhill.	Stanton Iron Company	—	—	—	2	1	—	2	3	—	8
Albert	Derbyshire Silkstone Colliery Co.	—	—	—	1	1	1	2	—	—	5
Riddings	James Oakes & Co.	—	—	2	1	—	1	—	—	1	5
Shireoaks	Shireoaks Colliery Company	—	1	1	—	—	1	1	1	—	5
Snibston	G. R. Stevenson & Co.	—	—	—	1	—	2	1	—	—	
Stanton	E. Nadin & Co.	2	—	—	—	1	1	—	—	—	4
Glascote	Firmstone & Co.	1	—	—	1	1	—	—	—	—	3
Pinxton	Coke & Co.	1	—	1	—	1	—	—	—	1	4
Moira, Oakthorpe, &c.	E. Abney Hastings	—	1	1	—	—	1	—	—	—	3
Granville	Granville Colliery Company	—	1	—	—	1	1	—	—	—	3
Birley Vale	Jeffcock & Dunn	—	—	1	—	1	1	—	1	1	5
Hucknall Torkard	E. Ellis & Co.	—	1	1	—	—	—	1	1	—	4
Hill Top	W. Swan	1	—	—	—	—	1	1	—	—	3
Clifton	Saul Isaac, M.P.	—	—	—	—	—	—	2	1	1	4
Nailstone	J. J. Ellis	2	—	—	—	—	—	—	1	1	4
Hawkesbury	Jas. Darlington & Co.	—	—	1	—	1	—	—	—	—	2
Renishaw Park, &c.	J. & G. Wells	—	—	1	—	—	1	—	2	—	4
Denby	W. D. Lowe	—	—	—	—	1	1	—	—	—	2
Tibshelf & New Birchwood.	C. Seeley & Co.	—	—	—	—	—	2	—	—	—	2
Charity	Addenbrooke & Pidcock	—	1	—	—	—	—	1	—	—	2
Renishaw	C. E. Appleby	—	—	1	—	—	—	1	1	—	3
Brampton	R. W. Jackson	—	—	—	—	—	—	2	—	—	2
Tapton	Tapton Coal Company	—	—	—	—	—	—	2	—	—	2
Pilsley	Holdsworth and Company	—	—	—	—	—	—	2	—	—	2
Pooley Hall	Limited Company	—	—	—	—	—	1	1	—	—	2
Griff	C. N. Newdegate, M.P.	—	—	—	—	—	—	1	—	—	1
Wyken	Wyken Colliery Company	—	—	—	—	—	—	1	—	—	1
Exhall	E. Wilson	—	—	—	—	—	—	1	—	—	1
Thatchmarsh	Buxton Lime Company	—	—	—	—	—	—	1	—	—	1
Netherseal	Netherseal Coal Company	—	—	—	—	—	—	1	—	—	1
Wingfield Lane	Samuel Lowe	—	—	—	—	—	—	1	—	—	1
Mapperley	Glendon Iron Company	—	—	—	—	—	—	1	—	2	3
Molyneux	Eastwood and Swingler	1	—	—	—	—	—	—	—	—	1
Haunch Wood	Nowell & Son	1	—	—	—	—	—	—	—	—	1
Victoria	— Troughton	—	1	—	—	—	—	—	—	—	1
Newbold	C. H. Plevins	—	1	—	—	1	—	—	—	—	2
Dronfield	Booker	—	1	—	—	—	—	—	—	—	1
Birch Vale	Bennett & Son	—	—	1	—	—	—	—	—	—	1
Whittington	Whittington Colliery Company	—	—	1	—	—	—	—	—	—	1
Grassmoor	Barnes, Brothers	—	—	1	—	—	—	—	—	1	2
Tame Valley	E. N. Nock	—	—	1	—	—	—	—	—	—	1
Old Swadlincote	Church and Maples	—	—	—	1	—	—	—	—	—	1
Swanwick	C. R. P. Morewood	—	—	—	1	—	—	—	1	1	3
Tibshelf & Blackwell.	E. Chambers	—	—	—	1	—	—	—	—	—	1
Annesley	Wm. Worswick	—	—	—	1	—	—	—	—	—	1
Wilnecote	Harris & Perrins	—	—	—	1	—	—	—	—	1	2
Oakerthorpe	Pearce & Co.	—	—	—	—	1	—	—	—	—	1
Kilbourne	Thomas and George Small	—	—	—	—	—	1	—	1	—	2
Dronfield	Jas. Rhodes & Son	—	—	—	—	—	1	—	—	—	1
Compstall	Andrews and Son	—	—	—	—	—	1	—	—	1	2
Baddesley	W. S. Dugdale	—	—	—	—	—	1	—	—	—	1
Unstone	Rangeley & Son	—	—	—	—	—	1	—	—	—	1
Ibstock	Ibstock Colliery Co.	—	—	—	—	—	—	—	1	—	1
Ilkeston	Ilkeston Colliery Co.	—	—	—	—	—	—	—	1	—	1
Unstone	Unstone Coal Co.	—	—	—	—	—	—	—	1	—	1
Blackwell	Blackwell Coal Co.	—	—	—	—	—	—	—	—	2	2
Ansley Hall	Ansley Hall Coal Co.	—	—	—	—	—	—	—	—	1	1
	Total	25	25	30	22	31	36	39	23	27	260

LIST OF NON-FATAL ACCIDENTS reported under the Coal Mines Regulation Act, in Mr. THOMAS EVANS' District, 1875.

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
DERBYSHIRE.														
Andrew, Brothers, Dronfield	Silkstone Main	–	–	–	–	–	–	–	–	–	–	–	–	–
Andrew and Son, Compstall, Stockport	Compstall Road	–	–	–	–	–	–	–	–	–	–	1	–	1
Arkwright, Executors of Robert, Sutton, Chesterfield	– –	–	–	–	–	–	–	–	–	–	–	–	–	–
Aspenshaw Coal Company, Hayfield, Stockport	– –	–	–	–	–	–	–	–	–	–	–	–	–	–
Alton Coal and Coke Company, Chesterfield	Alton, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	–	–
Ball, William, Ilkeston	Dodson	–	–	–	–	–	–	–	–	–	–	–	–	–
Badger, A. and W. T.	Fallswood	–	–	–	–	–	–	–	–	–	–	–	–	–
Baghurst & Co., Ambergate	Ambergate	–	–	–	–	–	–	–	–	–	–	–	–	–
Bainbridge, E. M., & Co.	Hundall	–	–	–	–	–	1	–	–	1	–	–	–	2
Barton, Francis	Wigwell	–	–	–	–	–	–	–	–	–	–	–	–	–
Barnes, Messrs., Grassmoor, Chesterfield	Dunston, No. 1	–	–	–	–	–	–	–	–	–	–	–	–	–
	Waterloo, No. 2	–	–	–	–	–	–	–	–	–	–	1	–	1
	Grassmoor, No. 3	1	–	–	–	–	1	–	–	–	1	1	–	4
Beardsley, John	Ormonde	–	–	–	–	–	–	–	–	–	–	–	–	–
Bennett, Thomas, New Mills, Stockport	Birch Vale	–	–	–	–	–	–	–	–	–	–	–	–	–
	Bugsworth	–	–	–	–	–	–	–	–	–	–	–	–	–
	High Lea	–	–	–	–	–	–	–	–	–	–	–	–	–
	Shawmarsh	–	–	–	–	–	–	–	–	–	–	–	–	–
Bingham, Richard	Cowley	–	–	–	–	–	–	–	–	–	–	–	–	–
Bircumshaw and Son, Clay Cross	Newmarket	–	–	–	–	–	–	–	–	–	–	–	–	–
Black, C., and Company	Brimington Lane	1	–	–	–	–	–	–	–	–	–	–	–	1
Blackwell Colliery Company, Limited, Alfreton	A. Winning, Nos. 1, 2	–	–	–	1	–	–	–	–	1	–	–	–	2
	B. Winning, Nos. 3, 4	–	–	–	–	–	–	–	–	–	–	–	–	–
Boam, H.	Dunstead	–	–	–	–	–	–	–	–	–	–	–	–	–
Bostock and Company	Carr Close	–	–	–	–	–	–	–	1	–	–	–	–	1
Booker, William, and Company	Woodhouse	–	–	–	–	–	–	–	–	–	–	–	–	–
Bridden, W. and H.	Brockwell	–	–	–	–	–	–	–	–	–	–	–	–	–
Brocklehurst, Thomas	Dousell	–	–	–	–	–	–	–	–	–	–	–	–	–
Butterley Iron and Coal Company, Alfreton	Butterley Park	–	–	–	–	–	–	–	–	–	–	1	–	1
	Nos. 1, 2, 3, and 5	–	–	–	–	–	–	1	–	–	–	–	–	1
	Forty Horse	–	–	–	–	–	–	1	–	–	–	–	–	1
	Britain	–	–	–	–	–	–	–	–	–	–	1	–	1
	Brands	–	–	–	–	–	–	–	–	–	–	–	–	–
	Western	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ripley, Nos. 1 and 2	1	–	–	–	–	–	–	–	–	–	–	1	2
	Hartshay	–	–	–	–	–	–	–	–	–	–	–	–	–
	Waingroves	–	–	–	–	–	–	–	–	–	–	–	–	–
	Railway	1	–	–	–	–	–	–	–	–	–	–	–	1
	Whiteley	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calley	–	–	–	–	–	–	–	–	–	–	–	–	–
	Brickyard	–	–	1	–	–	–	–	–	–	–	–	–	1
	New Main, Nos. 7 & 8	–	–	–	–	–	–	–	–	–	–	–	–	–
	Exhibition	–	–	–	–	–	–	–	–	–	–	–	–	–
	Birchwood	–	–	–	–	–	–	–	–	–	–	–	–	–
	Denby Hall, Nos. 1 & 2	–	–	–	–	–	–	–	–	–	–	–	–	–
	Langley	–	–	–	–	–	–	–	–	–	–	1	–	1
	Bailey Brook	–	–	–	–	–	–	–	–	–	–	–	–	–
	Loscoe	–	–	–	–	–	–	–	–	–	–	–	–	–
	Granby, Nos. 1, 2, & 3	–	–	–	–	–	–	–	–	–	–	–	–	–
Buxton Lime Company, Buxton	Axe Edge	–	–	–	–	–	–	–	–	–	–	–	–	–
	Thatchmarsh	–	–	–	–	–	–	–	–	–	–	–	–	–
	Whaley	–	–	–	–	–	–	–	–	–	–	–	–	–
	Horwich Tunnel	–	–	–	–	–	–	–	–	–	1	–	–	1
Bramhall, Edward, Birley Lane, Eckington	Birley Moor	–	–	–	–	–	–	–	–	–	–	–	–	–
Carr, Robert	Brimington Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Chambers, Edward	Tibshelf	–	–	–	–	–	–	–	–	–	–	–	–	–
	Spaw Croft	–	–	–	–	–	–	–	–	–	–	–	–	–
	Dimminsdale (Old)	–	–	–	–	–	1	–	–	–	–	–	–	1
	Ditto (New)	–	–	–	–	–	–	–	–	–	–	–	–	–
Chesterfield and Boythorpe Coal Company	Boythorpe Lane	1	–	1	–	–	–	–	–	–	–	2	–	4
	Renishaw	–	–	–	–	–	–	–	1	–	–	–	–	1
Church and Maples, Burton-on-Trent	Old Swadlincote	1	–	–	–	–	–	–	–	1	–	–	–	2
	Stanhope	–	–	–	–	–	–	1	–	–	–	–	–	1
	Woodfield	–	1	–	–	–	–	–	–	–	–	–	–	1

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Clay Cross Iron and Coal Company, Sir W. Jackson, Bart.	Cannel	–	1	–	–	–	–	–	–	–	–	–	–	1
	Clay Cross, Nos. 1, 2	1	–	–	1	–	1	–	2	1	1	–	2	9
	Moreton, No. 5	2	–	–	–	2	–	–	2	–	1	–	–	7
	North Wingfield, No. 7	–	–	–	–	–	–	–	–	–	1	–	–	1
	Park House, No. 4	–	–	–	–	–	–	1	–	–	–	–	1	2
Clegg Brothers, Clay Cross	No. 8, Clay Cross	–	–	–	–	–	–	–	–	–	–	–	–	–
Coke and Company, Alfreton	Carnfield (Hard)	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ditto (Soft)	–	–	–	–	–	–	–	–	–	–	–	–	–
	Langton	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pinxton	–	–	–	–	–	–	–	–	–	–	–	–	–
	Sleights, Nos. 1 and 6	–	–	–	–	–	–	–	–	–	–	–	–	–
Cotterill, William	Woodville	–	–	–	–	–	–	–	–	–	–	–	–	–
Coton Park Colliery Company	Coton and Lenton	–	–	2	–	–	–	1	–	1	–	1	–	5
Countess of Chesterfield, Burton-on-Trent	Bretby, Nos. 1, 2, 3	–	–	1	4	1	1	–	2	1	2	2	–	14
	Bretby, New	–	–	–	–	–	–	–	–	1	–	–	–	1
Cursham, Wm. G.	Heage (Old)	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ditto (New)	–	–	–	–	–	–	–	–	–	–	1	–	1
Dawes, George and W. H., and Company	Salterwood (Old)	–	–	1	–	–	–	–	–	–	–	–	–	1
	Ryefield, Nos. 1 and 2	–	1	–	–	–	–	–	1	–	–	–	–	2
Derbyshire Silkstone Coal Company, Chesterfield	Albert	1	–	1	–	–	–	–	–	–	3	1	–	6
Dixon, John Henry, Brampton, Chesterfield	Old Brampton	–	–	–	–	–	–	–	–	–	–	–	–	–
Dronfield Silkstone Coal Company	Dronfield Silkstone	–	–	–	–	–	–	–	–	–	–	–	–	–
	Gosforth	–	–	–	–	–	–	–	–	–	–	–	–	–
Eley and Company	Heanor	–	–	–	–	–	–	–	–	–	–	–	–	–
Evans, Richard, Ilkeston	Newthorpe Lodge	–	–	–	–	–	–	–	–	–	–	–	–	–
Galloway, Messrs., Manchester	Owl Coates	–	–	–	–	–	–	–	–	–	–	–	–	–
Gill and Company, Unstone	Apperknowl	–	–	–	–	–	–	–	–	–	–	–	–	–
Gillett, Brothers	Heanor Common Side	–	–	–	–	–	–	–	–	–	–	–	–	–
Glendon Iron Company, Ilkeston	Mapperley	1	–	–	–	–	–	–	–	–	–	–	1	2
Gregory and Sharratt, Chesterfield	Reservoir	–	–	–	–	–	–	–	–	–	–	–	–	–
Granville Colliery Company, Burton-on-Trent	Granville	1	1	–	–	–	–	1	–	–	1	–	–	4
Gregory, G. B., Heanor	Church	–	–	–	–	–	–	–	–	–	–	–	–	–
Hall, L. and E., New Mills, Stockport	Beard and Bugsworth	–	–	–	–	–	–	–	–	–	–	–	1	1
	Burn'd Edge, Nos. 1, 2	–	–	–	–	–	–	–	–	–	–	–	–	–
	Shale Cross	–	–	–	–	–	–	–	–	–	–	–	–	–
Hardwick and Brailsford	Woodhouse Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Haslam, W. C.	Pentrich	1	–	–	–	–	–	–	–	–	–	–	–	1
Hardwick Coal Company, Chesterfield	Holmwood	–	–	–	–	–	1	–	–	–	–	1	1	3
Hastings, Charles F., Abney	Blackfordby	–	–	–	–	–	–	–	–	–	–	–	–	–
Hayes, Thomas, and Company	Old Brampton	–	–	–	–	–	–	–	–	–	–	–	–	–
Hall and Boardman, Burton-on-Trent	Cadley Hill, Nos. 1, 2	1	–	–	2	1	1	2	–	–	–	–	1	8
	Gresley Wood	–	–	–	–	–	–	–	–	–	–	–	–	–
	Swadlincote, Nos. 1, 2, and 3	–	2	–	–	1	–	–	–	2	2	–	–	7
Havenhand and Allen, Dronfield	Apperknowl	–	–	–	–	–	–	–	–	–	–	–	–	–
Heanor and Marlpool Colliery Company	Church	–	–	–	–	–	–	–	–	–	–	–	–	–
Hoskin, Samuel, and Company	Ashgate	–	–	–	–	–	–	–	–	–	–	–	–	–
	Cutthorpe	–	–	–	–	–	–	–	–	–	–	–	–	–
Hewitt, John Linby, Unstone, Sheffield	Bull Close, Nos. 1, 2	–	–	–	–	–	–	–	–	–	–	–	–	–
Holdsworth, Thomas	Alma	–	–	–	–	–	–	–	1	–	–	–	–	1
Holdsworth and Company, Chesterfield	Pilsley, Nos. 1, 2, and 3	–	–	–	–	–	–	1	–	–	–	–	–	1
Hoskin, George, Chesterfield	Somersall	–	–	–	–	–	–	–	–	–	–	–	–	–
Holford, W. D., Old Whittington	Hill House	–	–	–	–	–	–	–	–	–	–	–	–	–
Hucknall Huthwaite Company, Alfreton	Hucknall Huthwaite	–	–	–	–	–	–	–	–	–	–	–	–	–
Hutchinson and Saxon	Stanley	–	–	–	–	–	–	–	–	–	–	–	–	–
	Unstone	–	–	–	–	–	–	–	–	–	–	1	–	1
Ilkeston Colliery Company	Furnace, No. 1	–	–	–	–	–	–	–	–	–	–	–	–	–
	New Sinking	–	–	1	–	–	–	–	–	–	–	–	1	2
Industrial Coal Company	Hasland	–	–	–	–	–	–	–	–	–	–	–	–	–
	Whitebank, Nos. 1, 2	–	–	–	–	–	–	–	–	–	–	–	–	–

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Jackson, R. W., and Company	Brampton (Old)	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ditto (New)	–	–	1	–	–	–	–	–	–	–	–	–	1
Jeffcock and Dunn, Sheffield	Birley Railway	–	–	–	1	–	–	1	–	–	1	–	1	4
	„ North	–	–	2	1	–	–	–	–	1	–	–	–	4
	„ Parkgate	–	–	–	–	–	1	–	–	–	–	–	–	1
Jowitt, J., Stockport	Chisworth	–	–	–	–	–	–	–	–	–	–	–	–	–
	Mellor	–	–	–	–	–	–	–	–	–	–	–	–	–
Jowitt and Clayton	Simmondsley	–	–	–	–	–	–	–	–	–	–	–	–	–
Knight, Edward, and Company, Dronfield, Sheffield	Oxclose	–	–	–	–	–	–	–	–	–	–	–	–	–
Knowles and Company, Whittington, Chesterfield	Forge Colliery	–	–	–	–	–	–	–	–	–	–	–	–	–
Kirby, Thomas, Eckington	Phœnix	–	–	–	–	–	–	–	–	–	–	–	–	–
Kirby and Cross, Clay Cross, Chesterfield	Newmarket	–	–	–	–	–	–	–	–	–	–	–	–	–
Langley Mill Engineering Company	Langley Mill	–	–	–	–	–	–	–	–	–	–	–	–	–
Lancaster and Knowles	Highfield	–	–	–	–	–	1	–	–	–	–	–	–	1
Lowe, W. D., Denby	Denby	–	–	–	–	–	–	–	–	–	–	–	1	1
	Salterwood (New)	–	–	–	–	–	–	–	1	–	–	–	–	1
Lowe, Samuel, Chesterfield	Whitecoates	–	–	–	–	–	–	–	–	–	–	–	–	–
	Wingfield Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Lower House Colliery Company, New Mills, Stockport	Lower House	–	–	–	–	–	–	–	–	–	–	–	–	–
Lucas, Messrs.	Highfield	–	–	–	–	–	–	–	–	–	–	–	–	–
Manor Silkstone, Dronfield, Sheffield	Manor	–	–	–	–	–	–	–	–	–	–	–	–	–
Marehay Colliery Company	Morley Park	–	–	–	–	–	–	–	–	–	–	–	–	–
Manners Colliery Company, Ilkeston	Manners	–	–	–	–	–	–	1	–	–	–	–	–	1
Mason, Thomas, Stonegravels, Chesterfield	Hady	–	–	–	–	–	–	–	–	–	–	–	–	–
Monkwood Colliery Company	Monkwood (Old)	–	–	–	–	–	–	–	–	–	–	–	–	–
	Barlow Lees	–	–	–	–	–	–	–	–	–	–	–	–	–
Moorwood Moor Coal Company	Morwood Moor	–	–	–	–	–	–	–	–	–	–	–	–	–
Moorwood, C. R. P., Alfreton	Swanwick (Deep)	–	1	3	–	1	–	–	–	1	–	–	–	6
	Ditto (Old)	–	–	–	–	–	–	–	–	–	–	–	1	1
Mundy, Alfred M., Derby	Shipley	2	–	–	–	–	–	–	2	1	–	–	–	5
	Woodside	–	–	–	–	–	–	1	–	–	–	–	–	1
	Nutbrook	–	–	–	1	–	–	1	–	–	–	–	–	2
	Coppice	–	–	–	–	–	–	–	–	–	–	–	–	–
Nadin, Messrs. J. and N., Burton-on-Trent	Woodfield	1	–	–	–	–	–	–	–	–	–	–	–	1
	Main	–	–	–	–	–	–	–	–	–	–	–	–	–
	Stanhope	1	–	–	–	–	–	–	–	1	–	–	–	2
	Eureka	–	–	–	–	–	–	–	–	–	–	–	–	–
Naylor, Henry, Chesterfield	Brockwell Road	–	–	–	1	–	–	–	–	–	–	–	–	1
	Newbold Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Newdigate, Lieut.-Col., Derby	West Hallam, Nos. 2 & 3	–	–	–	–	–	–	–	–	–	–	–	–	–
Nichols, William, Chesterfield	Riber	–	–	–	–	–	–	–	–	–	–	–	–	–
North Derbyshire Brick-works, Hayfield, Stockport	Mill Brow	–	–	–	–	–	–	–	–	–	–	–	–	–
Northfield Colliery Company, Chesterfield	Northfield	–	–	–	–	–	–	–	–	–	1	–	–	1
Oakes, I., and Company, Alfreton	Selstone	–	–	–	–	1	–	–	–	–	–	–	–	1
	Coates Park	1	–	–	–	–	–	–	–	1	1	–	–	3
	Stonyford	–	–	–	–	1	–	–	–	–	–	–	–	1
	Ridding, Nos. 1 & 2	1	–	–	–	–	–	1	–	1	–	1	–	4
	Tunnel	–	2	1	1	–	1	1	1	–	–	–	1	8
	New Silkstone	–	–	–	2	1	–	–	1	–	–	2	2	8
	Ironstone, Nos. 1, 2, & 3	–	–	–	–	–	–	–	–	–	–	–	–	–
Oldfield and Company, Chesterfield	Cutholme	–	–	–	–	–	–	–	–	–	–	–	–	–
Orwin, George, Newbold, Chesterfield	Old Dunston	–	–	–	–	–	–	–	–	–	–	–	–	–
Pearson, Thomas, Chesterfield	Highfield	–	–	–	–	–	–	–	–	–	–	–	–	–
Pearson, George, and Company, Alfreton	Oakerthorpe	–	–	–	–	–	–	–	–	–	1	–	–	1
Plevins, C. H., and Company, Newbold, Chesterfield	Blackshale	–	–	–	–	–	–	–	–	–	–	–	–	–
	Potters	–	–	–	–	–	–	–	–	–	–	–	–	–
Price, Thomas	Morley Park	–	–	–	–	–	–	–	–	–	–	–	–	–
Proctor, William, Stockport	Fernilee	–	–	–	–	–	–	–	–	–	–	–	–	–

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Plant, John, Birley, Sheffield	Birley Hackenthorpe	–	–	–	–	–	–	–	–	–	–	–	–	–
Rangeley, Henry, and Son, Unstone, Sheffield	Drift	–	–	–	–	–	–	–	–	–	–	–	–	–
Renishaw Coal and Iron Company, Chesterfield	Cottam (Old)	–	–	1	–	–	–	–	–	–	–	–	–	1
	Ditto (New)	–	–	–	–	–	–	–	–	–	–	–	–	–
Rhodes, Brothers	Troway	–	–	–	–	–	–	–	–	–	–	–	–	–
Rhodes, James, and Son	Coal Aston	–	–	–	–	–	–	–	–	–	–	–	–	–
	Summerley	3	–	2	–	1	3	2	–	3	1	–	–	15
Rhodes, John	Plumbley (Old)	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ditto (New)	–	–	–	–	–	–	–	–	–	–	–	–	–
Richardson and Vardy	White Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Round and Company	Stretton	–	–	–	–	–	–	–	–	–	–	–	–	–
Robinson, Aaron, Chesterfield	Calow	–	–	–	–	–	–	–	–	–	–	–	–	–
Rutland Coal Company, Ilkeston	Rutland, Nos. 1, 2, 3	1	–	–	–	–	–	–	–	–	1	–	–	2
Sheard, John, Dronfield	Gomersal	–	–	–	–	–	–	–	–	–	–	–	–	–
Sceley, Charles, and Company, Alfreton	Berrister Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
	Coates Park	–	–	–	–	–	–	–	–	–	–	–	–	–
	Tibshelf, Nos. 1, 2	–	–	–	–	–	1	–	–	–	1	–	–	2
	Shady	–	–	–	–	–	–	–	–	–	–	–	–	–
	Birchwood Lane	1	–	–	–	–	–	–	–	–	–	–	2	3
Sheepbridge Coal and Iron Company, Chesterfield	Norwood	2	1	–	1	–	–	–	–	1	1	–	–	6
	Sheepbridge	–	–	–	–	–	–	–	–	–	–	–	1	1
	Dunston	–	2	–	–	–	1	1	1	–	–	1	–	6
	Nesfield	1	–	1	–	–	–	–	–	–	1	–	–	3
	Grasscroft	–	–	–	1	–	–	–	–	–	–	–	–	1
Shirland Colliery Company, Alfreton	Shirland, Nos. 1 and 2	–	–	–	–	–	–	–	–	2	–	–	–	2
Shirtcliffe, John	Killamarsh	–	–	–	–	–	–	–	–	–	–	–	–	–
Small and Company, South Normanton, Alfreton	Hill Top	–	–	–	–	–	–	–	–	–	–	–	–	–
Small, G. and T., Kilburne, Derby	Killburne	–	–	–	–	–	–	–	–	–	–	–	–	–
Stanfield and Company, New Mills, Stockport	Lower House	–	–	–	–	–	–	–	–	–	–	–	–	–
Stanton Iron Company, Nottingham	Dale	–	–	–	–	–	–	–	–	–	–	–	–	–
	Babbington Ironstone	–	–	–	–	–	–	–	–	–	–	–	–	–
Stanley Colliery Company, Limited, Derby	Stanley	–	–	–	–	–	–	–	–	–	1	–	–	1
Staveley Coal and Iron Company, Chesterfield	Campbell	–	–	–	–	–	–	–	–	–	1	–	–	1
	Hollingwood (Old)	2	–	–	–	–	–	1	–	–	–	–	–	3
	Ditto (New)	1	–	–	–	–	–	–	1	1	–	–	–	3
	Seymour	–	–	–	–	–	–	–	–	–	–	–	–	–
	Speedwell	–	–	–	–	–	–	–	–	–	–	–	–	–
	Springwell	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ditto Ironstone	–	–	–	–	–	–	–	–	–	–	–	–	–
	Barlborough	–	–	–	–	–	–	–	–	–	–	–	–	–
Shaw, Samuel, Norman, Ilkeston	Norman	–	–	–	–	–	–	–	–	–	–	–	–	–
Shireoaks Colliery Company	Clown	–	–	–	–	–	–	–	–	–	–	–	–	–
Shorthouse and Gregory	Peacock	–	–	–	1	–	–	–	–	–	–	–	–	1
Tapton Coal Company, Limited, Chesterfield	Wallsend	–	–	–	–	–	–	–	–	–	–	–	–	–
	Locoford	1	1	–	–	2	1	–	–	–	–	1	1	7
Tymm, J. and N.	Marple	–	–	1	–	–	–	–	–	–	–	–	–	1
Tyler and Woodward	Clay Cross	–	–	–	–	–	–	–	–	–	–	–	–	–
Temple Normanton Colliery Co.	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Unstone Coal and Coke Company, Limited, Chesterfield	Unstone	–	–	1	1	–	1	–	–	–	1	–	1	5
Ward, Brothers	Birdfield	–	–	–	–	–	–	–	–	–	–	–	–	–
Ward, T.	Killamarsh	–	–	–	–	–	–	–	–	–	–	–	–	–
Walmsley, William	Field House	–	–	–	–	–	–	–	–	–	–	–	–	–
Wells, Joseph and George, Eckington, Chesterfield	Renishaw Park	1	–	–	–	–	–	1	–	–	–	–	1	3
	Nos. 1, 2, 3, and 4	1	–	–	–	–	–	–	–	–	–	–	–	1
	Hornthorpe	–	–	–	–	–	–	–	–	–	–	–	–	–
	Park Gate	–	–	–	–	–	–	–	–	–	–	–	–	–
	Prince Albert	–	–	–	–	–	–	–	–	–	–	–	–	–
	Mosbro Moor	–	–	–	–	–	–	–	–	–	–	–	–	–
	High Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
	More Hole	–	–	–	–	–	–	–	–	–	–	–	–	–
West, H. H., Heanor, Langley Mill	New Heanor	–	–	–	–	–	–	–	–	–	–	–	–	–
Whittington Coal Company, Chesterfield	Foxley Oaks	–	–	–	–	–	–	–	–	1	–	–	–	1
Whittington and Sheepbridge Coal Company	Broom Field	–	–	–	–	–	–	–	–	–	–	–	–	–
Whitehouse and Son	West Hallam, Nos. 1 and 2	1	–	–	–	–	–	–	–	1	–	–	–	2
	Kirb. Hallam	–	–	–	–	–	–	–	–	–	1	–	–	1

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
White, George, Dronfield	Rough Piece	–	–	–	–	–	–	–	–	–	–	–	–	–
Wingerworth Coal Company, Chesterfield	Avenue	–	–	–	–	–	–	–	–	–	–	–	–	–
	Williamthorpe	–	–	–	–	–	–	–	–	–	–	–	–	–
	Lings	–	–	–	–	–	–	–	–	–	–	–	–	–
Wingerworth Iron Company, Chesterfield	Walton Ironstone	–	–	–	–	–	–	–	–	–	–	–	–	–
	Tupton	1	–	–	–	–	2	–	–	–	1	–	1	5
Woodville Fire Brick Company	Clay Pits	–	–	–	–	–	–	–	–	–	–	–	–	–
Woodward, James, Swadlincote	Ditto	–	–	–	–	–	–	–	–	–	–	–	–	–
Wright, Joseph	Bear Tree	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTTINGHAMSHIRE.

Annesley Coal Company	Annesley, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	–	–
Awsworth Iron and Coal Company, Ilkeston	Furnace	–	–	–	–	–	–	–	–	–	–	–	–	–
	Blackshale	–	–	–	–	–	–	–	–	–	–	–	–	–
	Piper	–	–	–	–	–	–	–	–	–	–	–	–	–
Barber, Walker, and Company, Eastwood	Brinsley	–	–	1	2	–	–	–	–	–	2	1	1	7
	Cotmanhay	2	2	1	1	–	–	1	–	3	7	1	1	19
	Eastwood	1	2	2	1	–	–	1	–	2	–	–	–	9
	High Park	2	1	3	2	2	3	2	5	3	3	7	6	49
	Moor Green	3	1	2	2	1	–	2	2	2	2	2	4	23
	Underwood	1–	–	–	–	–	–	–	–	–	–	1	–	1
	Watnall (Old)	1	3	1	–	–	–	–	–	1	2	–	2	10
	Watnall (New)	–	–	1	–	1	–	–	–	–	1	–	–	3
	Willey Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Beardsley and Hogg, Eastwood	Brinsley	–	–	–	–	–	–	–	–	–	–	–	–	–
Bestwood Coal Company (Sinking)	Bestwood, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	1	1
Butterley Iron and Coal Company	Portland	–	–	–	–	–	–	–	–	–	–	–	–	–
	Nos. 1, 2, 4, and 6	–	2	–	–	–	–	–	–	–	–	–	–	2
	Mexbro' (North)	–	–	1	–	–	–	–	–	–	–	–	–	1
	„ (South)	–	–	1	–	–	–	–	–	–	–	–	–	1
	„ (Bottom)	–	–	1	–	–	–	–	–	–	–	–	–	1
	Plumptre	–	–	–	–	–	–	–	–	–	–	–	–	–
Bradbury, John	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Digby Coal Company, Eastwood	Speedwell	–	–	–	–	–	–	–	–	–	–	–	–	–
	Newthorpe (Hard)	–	–	1	–	–	–	–	–	–	–	–	–	1
	„ (Soft)	–	–	–	–	–	–	–	–	–	–	–	–	–
Eastwood and Swingler, Derby	Molyneux	–	–	1	–	–	2	–	–	–	–	–	–	3
Ellis and Company, Nottingham	Hucknall, No. 1	1	–	–	–	–	–	–	–	–	–	1	–	2
	„ No. 2	–	–	–	1	1	1	–	–	–	–	–	–	3
Gillett, F. C., worked by Messrs. Barber and Company, Pumping Water	Bennerley	–	–	–	–	–	–	–	–	–	–	–	–	–
Isaac, Saul, M.P., Nottingham	Clifton (Hard)	2	1	–	2	1	–	–	2	1	1	–	1	11
	„ (Soft)	–	–	–	2	–	–	–	–	–	–	–	–	2
Knighton and Smith, Eastwood	Springfield	–	–	–	–	–	–	–	–	–	–	–	–	–
Linby Coal Company, Nottingham	Linby	–	–	–	–	–	–	–	–	–	–	–	–	–
Lynch and Cadogan, Cossall, Nottingham	Cossall	–	–	–	–	–	–	–	–	–	–	–	–	–
Newstead Colliery Company	Newstead	–	–	1	–	–	–	–	–	1	–	1	–	3
New and Oldknow, Nottingham	Wollaton	–	–	–	1	–	–	–	–	1	1	1	–	4
Seeley, Charles, and Company, Nottingham	Bulwell	–	–	–	–	–	–	–	–	–	–	1	1	2
	Cinder Hill, Nos. 1 and 4	3	–	–	–	–	–	1	–	2	–	1	1	8
	Kimberley, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	–	–
	Newcastle	–	1	–	–	–	–	–	–	–	–	–	1	2

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Skegby Coal and Lime Company	Skegby	–	–	–	1	–	–	–	–	–	–	–	–	1
	Brierley Hill	–	–	–	–	–	–	–	–	–	–	–	–	–
Stanton Iron and Coal Company	Teversall, Nos. 1 and 2	–	–	1	–	1	–	–	1	–	–	–	–	3
	Pleasley	–	–	–	–	–	–	–	–	–	–	–	–	–
	Silver Hill	–	–	–	–	–	–	–	–	–	–	–	–	–
Shireoaks Colliery Company	Shireoaks, Nos. 1 and 2	–	1	1	1	–	–	–	–	1	–	–	–	4
	Steetley Wood	–	–	–	–	–	–	–	–	–	–	–	–	–
Stapleford Colliery Company	Stapleford	–	1	1	–	–	–	1	–	–	–	–	–	3

WARWICKSHIRE.

Ammington Colliery Company, Tamworth	Ammington	–	–	–	–	–	–	–	–	–	–	–	–	–
	Glascote	–	–	1	–	–	–	–	–	–	–	–	–	1
Ansley Hall Colliery Company, Atherstone	Ansley, Nos. 1, 2, and 3	–	–	–	–	–	–	–	–	–	–	–	–	–
Bedworth Coal and Iron Company, Bedworth	Woodlands	–	–	–	1	–	–	–	–	–	1	1	–	3
	Ironstone, Nos. 1, 2 3, and 4	–	–	–	–	–	–	–	–	–	–	–	–	–
Dugdale, W., Atherstone	Baddesley	1	2	–	2	–	–	–	1	–	–	–	–	6
Dumolo, T., Tamworth	Kettlebrook	–	–	–	–	–	–	2	2	1	1	–	–	6
Gibbs and Canning, Wilnecote, Tamworth	Wilnecote, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	–	–
Hawkesbury Colliery Company, Coventry	Hawkesbury	–	–	–	–	–	–	–	–	–	–	–	–	–
	Speedwell	–	–	–	–	–	–	–	–	–	–	–	–	–
	New Winnings	–	–	–	–	–	–	–	–	–	–	–	–	–
Harris, J. and W. S., Coventry	Craven	–	–	–	–	–	–	–	–	1	–	–	–	1
Hockley Hall Colliery Company, Tamworth	Whiteley	–	–	–	–	–	–	–	–	–	–	–	–	–
	Hockley Hall	1	–	–	–	–	–	–	–	1	–	–	–	2
	Nos. 2, 3, and 4	–	–	–	–	–	1	–	–	–	–	–	–	1
	Four Foot	–	–	1	–	–	–	–	–	–	–	–	–	1
	Ironstone	–	–	–	–	–	1	–	–	–	–	–	–	1
Marshall, C., Alvecote, Tamworth	Alvecote	–	–	–	–	–	–	–	–	–	–	–	–	–
Morgan, Davis, and Company, Wilnecote, Tamworth	Dost Hill	1	–	–	–	–	–	–	–	–	–	–	–	1
Morris and Shaw, Tamworth	Birch Coppice	–	–	1	–	–	–	–	–	–	–	–	–	1
Newdegate, Charles, M.P., Nuneaton	Griff 1, 2	–	–	–	–	–	–	–	–	–	–	–	–	–
	Nos. 3 and 4	–	1	–	–	–	–	–	–	–	–	–	–	1
Nowell and Son, Nuneaton	Haunch Wood	–	–	–	–	–	–	–	–	–	–	–	–	–
	Tunnel	–	–	–	–	–	–	–	–	–	–	–	–	–
Perrins and Harrison, Wilnecote, Tamworth	Wilnecote	1	–	–	–	–	–	1	–	–	1	–	–	3
Pooley Hall Colliery Company, Limited	Pooley Hall	–	1	–	–	1	–	–	–	1	1	–	–	4
Rawlins, John, Nuneaton	Nuneaton	–	–	–	–	–	–	–	–	1	–	–	–	1
Skey and Company, Wilnecote, Tamworth	Tame Valley	1	–	–	–	–	–	–	–	–	–	–	–	1
	Peel	–	–	–	–	–	–	–	–	–	–	–	–	–
	New Pit	–	–	–	–	–	–	–	–	–	–	–	–	–
Smallman and Company, Nuneaton	Harts Hill	–	–	–	1	–	–	–	–	–	–	–	–	1
Stanley, Brothers, Nuneaton	Swann Lane	–	–	–	–	–	–	–	–	–	–	–	–	–
Wilson, E., Bedworth	Collycroft	–	–	–	–	–	–	–	–	–	–	–	–	–
	Exhall	–	–	–	–	–	–	–	–	–	–	–	–	–
Wykin Coal Company, Coventry	Walsgrove	–	–	–	–	–	–	–	–	–	–	–	–	–
	Ironstone, Nos. 1, 2, & 3	–	1	–	–	–	–	–	–	–	–	–	–	1

LEICESTERSHIRE.

Owner or Company and Postal Address.	Name of Mine or Colliery.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Appleby Magna Colliery Company, Snareston	Appleby Magna	–	–	–	–	–	–	–	–	–	–	–	–	–
Baker, J. W., Heather, Coalville	Heather	–	–	–	–	–	–	–	–	–	–	–	–	–
Bagworth Coal Company, Bagworth	Bagworth, Nos. 1 and 2	–	–	–	–	–	–	–	1	1	–	–	–	2
Boothorpe Brick and Coal Company	Boothorpe	–	–	–	–	–	–	–	–	–	–	–	–	–
Checkland, Son, and Williams, Ashby-de-la-Zouche	Donisthorpe	–	–	–	–	–	1	–	–	–	1	1	–	3
Ellis, Joseph J.	Nailstone, Nos. 1 and 2	–	–	1	–	1	–	–	–	–	3	–	–	5
	Ellistown	–	–	–	–	–	–	–	–	–	–	–	–	–
Green, Thomas, Swadlincote	Potsherd, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	–	–
Hastings, Charles Frederick Abney, Moira, Ashby-de-la-Zouche	Reservoir	–	–	1	–	–	–	1	1	1	–	–	1	5
	Moira	–	–	–	–	–	–	–	–	–	–	–	–	–
	Church Gresley	1	1	–	2	1	–	–	1	–	1	1	2	10
	Oakthorpe	–	1	1	1	–	–	–	–	–	–	1	–	4
	Rawdon	1	–	–	–	–	–	–	–	–	–	–	–	1
	Blackfordby	–	–	–	–	–	–	–	1	–	–	–	–	1
Ibstock Coal Company, Coalville, Leicester	Ibstock, Nos. 1 and 2	–	–	–	–	–	–	–	–	–	–	–	–	–
Lancaster, John, and Company, Ashby-de-la-Zouch	Heath End	–	–	–	–	–	–	–	–	–	–	–	–	–
Lindridge Coal Company	Lindridge	–	–	–	–	–	–	1	–	1	–	–	–	2
Netherseal Colliery Company	Netherseal	–	–	1	1	–	–	–	1	–	–	–	–	3
Perry, Captain, Boothorpe	Plough Flats	–	–	–	–	–	–	–	–	–	–	–	–	–
Smart, Joseph and Son, Griffy dam, Ashby-de-la-Zouch	Griffy dam	–	–	–	–	–	–	–	–	–	–	–	–	–
Stephenson, G. R., and Company, Coalville	Snibston, No. 1	1	–	1	–	2	1	–	–	–	–	3	4	12
	Nos. 2 and 3	1	–	–	–	1	–	2	1	1	–	–	1	7
Swannington Colliery Company	Swannington	–	–	–	1	1	–	1	–	1	–	–	–	4
	Nos. 2 and 3	–	–	1	–	–	–	–	–	–	–	–	–	1
Thompson, Brothers, Woodville	Clay Pits	–	–	–	–	–	–	–	–	–	–	–	–	–
Whitwick Colliery Company, Coalville	Whitwick	–	–	–	–	–	–	–	1	1	1	–	–	3
	Nos. 3, 4, and 5	–	–	–	–	1	1	1	–	–	–	1	–	4
	Colerton	–	–	–	–	–	–	–	–	–	–	–	–	–

SUMMARY of NON-FATAL ACCIDENTS reported under the Coal Mines Regulation Act during the Year 1875.

County.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Derbyshire	36	15	21	18	11	20	20	17	25	27	18	24	252
Nottinghamshire	25	15	20	16	7	6	8	10	17	19	17	19	179
Warwickshire	5	5	3	4	1	2	3	3	5	4	1	–	36
Leicestershire	4	2	6	5	7	3	6	7	6	6	7	8	67
	70	37	50	43	26	31	37	37	53	56	43	51	534
Total during the year 1875													534

LIST of MINES abandoned and Plans sent to the Secretary of State, showing the workings of the Mine up to the time of the abandonment.
(Section 42, Mines Act, 1872.)

Name of Owner.	Name of Mine or Colliery.	Where situated.	Name of Seam.	Date sent to the Secretary of State.
Bainbridge and Partners	Hundall	Chesterfield	Silkstone	Dec. 21, 1874.
Barnes Brothers	Grassmoor	Ditto	Top Hard	Jan. 28, 1875.
Hoskin, Samuel, and Co.	Ashgate	Ditto	Silkstone	Feb. 18, 1875.
Wollaton Colliery Company	Wollaton	Nottingham	Waterloo	March 5, 1875.
Church and Maple	Swadlincote	Burton-on-Trent	Block	Ditto.
Butterley Iron and Coal Company.	Marehay	Ripley	Ironstone	March 23, 1875.
Heanor and Marlpool Colliery Company.	Church	Heanor	Comb	April 30, 1875.
Rhodes and Son	Coal Aston	Dronfield	Silkstone	June 12, 1875.
Jackson, R. W., and Co.	Old Brampton	Chesterfield	Ditto	June 14, 1875.
Jackson, R. W., and Co.	Alton (Old)	Ditto	Alton	Ditto.
Rutland Coal Company	Rutland	Ilkeston	Deep Soft and Roof.	Oct. 7, 1875.
Swann, Joseph	Hill Top, S. Normanton.	Alfreton	Top Hard	Oct. 13, 1875.
White, George	Rough Piece	Dronfield	Silkstone	Oct. 20, 1875.
Stapleford Colliery Co.	Stapleford	Nottingham	Kilburn	Nov. 23, 1875.
Stanton Iron Company	Babbington	Eastwood	Ironstone	Dec. 9, 1875.
Booth, William	Langley Mill	Langley Mill	Comb	Dec. 20, 1875.
Seeley, Charles, and Co.	Coates Park	Alfreton	Deep Soft	Dec. 21, 1875.
Seeley, Charles, and Co.	Birchwood	Ditto	Deep Hard, Deep Soft, and Brown Rake Ironstone.	Ditto.

LIST of MINES classed under the Coal Mines Regulation Act in the Midland District, 1875.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
		DERBYSHIRE.		
Andrews, Brothers, Dronfield	Silkstone	Silkstone Main	Dronfield	William Minikin.
Andrews and Son, Compstall, Stockport.	Mountain	Compstall Road	Marple	S. C. Wardell.
Aspenshaw Coal Company, Hayfield, Stockport.	Ditto	Aspenshaw Tunnel	Hayfield	Abel Clayton.
Alton Coal and Coke Company, Chesterfield.	Sinking	Sinking	Ashover	Joseph Buxton.
Ambergate Coal and Brick Company.	Naughton	Ambergate	Ambergate	Thomas Hewitt.
Ball, William, Ilkeston	Deep Soft	Dodson	Ilkeston	William Ball.
Badger, A. and W. T., Dronfield.	Silkstone	Fallswood	Dronfield	Daniel Brown.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Barton, Francis Whatstandwell, Ambergate.	Mountain	Wigwell	Ambergate.	
Barnes, Messrs., Grassmoor, Chesterfield	Deep Soft	No. 1, Grassmoor	Chesterfield	Benjamin Bamford.
	Waterloo	No. 2 „		
	Ell	No. 3 „		
	Sinking	Sinking		
Beardsley, John	Top Hard	Ormonde	Langley Mill	John Beardsley.
Bennett, Thomas, New Mills, Stockport	Mountain	Birch Vale	New Mills	Joseph Hyde. David Ashworth.
	Ditto	Bugsworth		
	Ditto	Thornsett Hey		
Bingham, Richard Cowley, Chesterfield.	Mickley	Cowley	Chesterfield	Richard Bingham.
Bircumshaw and Son, Clay Cross.	Cannel	Newmarket	Clay Cross	J. H. Bircumshaw.
Black, C., and Company	Kilburn	Brimington Lane	Chesterfield	E. Houfton.
Blackwell Colliery Company, Limited, Alfreton	Deep Hard	No. 2, A. Winning.	Alfreton	J. Alfred Longden and Agent.
	Tupton	No. 1, „		
	Silkstone	„ „		
	Deep Hard	No. 3, B. Winning.		
	Tupton	No. 4, „		
Bostock and Company, Ilkeston.	Deep Soft	Carr Close	Ilkeston	Simeon Watson.
Booker, William, and Company.	Silkstone	Woodhouse, Nos. 1 and 2.	Dronfield	James Bennett.
Bridden, W. and H.	Deep Hard	Brockwell	Chesterfield	W. F. Howard, M.E.
Butterley Iron and Coal Company, Alfreton	Ell and Ironstone.	Butterley Park, No. 1.	Ripley	Richd. J. Strick and Agent.
	Ironstone	Butterley Park, No. 3.		
	Deep, Hard, and Soft.	Butterley Park, No. 5.		
	Deep, Hard, Soft, and Ell.	Forty Horse		
	Deep, Hard, and Soft.	Britain		
	Deep Soft Coal	Brands		
	Soft and Ell	Western		
	Deep, Hard, and Soft.	Ripley, Nos. 1 and 2		
	Ditto	Hartshay		
	Ditto	Waingroves		
	Ditto	Railway		
	Ironstone	Ormonde		
	Deep, Hard, and Soft.	Calley		
	Ell	Brickyard		
	Silkstone	New Main, No. 7		
	Silkstone and Kilburn.	„ No. 8		
	Kilburn	Exhibition	Langley Mill	
	Ironstone	Denby Hall		
	Deep, Hard, and Soft.	Langley		
	Ditto	Bailey Brook		
	Ditto	Loscoe		
	Ditto	Old Granby		
	Ironstone	Ilkeston, Nos. 1, 2, and 3.		
Buxton Lime Company, Buxton	Mountain	Goyte	Buxton	Hubbetsey, Agent. William Day.
	Ditto	Thatchmarsh		
	Ditto	Whaley	Whaley Bridge	Thomas Srigley.
	Ditto	Horwich Tunnel		
Bramhall, Edward, Birley Lane, Eckington.	Silkstone	Birley Moor	Eckington	Edward Bramhall.
Carr, Robert	Ditto	Brimington Lane	Chesterfield	John Carr (standing).
Cathole Colliery Company, Holymoor, Chesterfield.	Naughton	Cathole	Chesterfield	Herbert Houghton.
Chambers, Edward	Top Hard	Tibshelf	Tibshelf	C. R. Morgan and Agent.
	Ditto	Spaw Croft		
	Ditto	Dimminsdale (Old)		
	Dunsil	Dimminsdale (New).		

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Chesterfield and Boythorpe Colliery Company -	Tupton -	Boythorpe Lane -	Chesterfield -	Elijah Houfton.
	Ditto -	Tupton - -		
	Silkstone -	Silkstone -		
	Ditto -	Renishaw - -	Eckington.	
Church and Maples, Swadlincote, Burton-on-Trent -	Stanhope -	Stanhope - -	Swadlincote -	Thomas Wilson. George Lewis, Agent.
	Woodfield -	Woodfield -		
Clay Cross Iron and Coal Company - -	Silkstone and Cannel.	Clay Cross, No. 1	Clay Cross -	T. D. Croudace. J. P. Jackson, Agent.
	Silkstone -	„ „ No. 2		
	Tupton -	„ „ No. 3		
	Deep Hard -	„ „ No. 6		
	Silkstone -	Moreton „ No. 5		
	Ditto -	Park House -		
	Ditto -	North Wingfield		
Clegg, Brothers, Clay Cross -	Tupton -	Danesmoor, No. 8	Clay Cross -	Saml. Clegg.
Coke and Company, Alfreton - - -	Deep, Hard, and Soft.	Carnfield - -	Pinxton -	B. T. Chadburn and Agent.
	Top Hard -	Langton - -		
	Deep, Hard, and Soft.	Sleights, Nos. 1 and 6.		
	Tupton -	Pinxton, No. 3 -		
Cotterill, William, Woodville	Fire Clay -	Woodville - -	Burton-on-Trent.	A. Eley.
Coton Park and Lenton Colliery Company.	Moira Main -	Coton and Lenton	Lenton, Burton	Hargreave Walters. Gillet and Sankey, Viewers.
Countess of Chesterfield, Burton-on-Trent - -	Eureka -	Bretby, No. 1 -	Burton-on-Trent.	William Johnson and Agent.
	Woodfield -	„ No. 2 -		
	Stanhope -	„ No. 3 -		
	Nether, Woodfield, and Eureka.	Newhall Park -		
Cropper, John - -	Silkstone -	Brushes -	Chesterfield -	James Yates.
Cursham, Wm. G. - -	Kilburn -	Heage (Old) -	Belper -	Samuel Allsop.
	Ditto -	„ (New) -		
Crooks, John Brampton, Chesterfield.	Silkstone -	Holme - -	Chesterfield -	W. F. Howard, Agent.
Dawes, C. and W. H., Denby, Derby - - -	Deep Hard -	Salterwood -	Denby -	William Tomlinson,
	Tupton -	Ryefield, No. 1 -		
	Ironstone -	„ No. 2 -		
Derbyshire Silkstone Coal Company, Chesterfield.	Silkstone -	Albert - -	Sheepbridge -	Reuben Allen. Gillet and Sankey, Viewers.
Derbyshire and Nottinghamshire Co-operative Mining Society.	Tupton -	Victoria - -	Stanley -	Henry Booth.
Dronfield Silkstone Coal Company, Dronfield -	Silkstone -	Dronfield Silkstone.	Dronfield -	J. Addy, Agent. F. Havenhand.
	Ditto -	Gosforth (Old) -		
	Ditto -	„ (New) -		
Evans, Wigfield, and Company, Staveley.	Tupton -	St. John's - -	Staveley -	Robt. Errington.
Fletcher, Henry, Heanor Lane, Langley Mill -	Top Hard -	Heanor Lane -	Langley Mill -	Henry Fletcher.
	Ditto -	Dunstead - -		
Galloway, Messrs., Manchester.	Ditto -	Owl Coates -	Chesterfield -	Samuel Hague.
Gill and Company, Unstone -	Piper - -	Apperknowl -	Unstone -	Standing.
Gillett, Brothers - -	Comb -	Heanor Common Side.	Heanor -	William Gillett.
Glendon Iron Company, Ilkeston.	Deep, Hard, and Soft.	Mapperley - -	Ilkeston -	George Lewis, M.E.
Gosling and Company - -	Hazle - -	West Field -	Eckington -	Fredk. Gosling.
	Top Hard -	Hollingwood -		
Gregory and Sharratt, Chesterfield.	Tupton -	Reservoir - -	Chesterfield -	W. F. Howard, Agent.
Granville Colliery Company, Burton-on-Trent.	Main and Little.	Granville - -	Swadlincote -	Edward Hedley, M.E.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Hall, L. and E., New Mills, Stockport	Mountain Mine	Beard and Bugsworth.	New Mills	Joseph C. Braddock and Agent.
	Ditto	Burn'd Edge, No. 1.		
	Ditto	Burn'd Edge, No. 2.		
	Ditto	Shale Cross		
Hardwick and Brailsford	Hazel	Woodhouse Lane	Eckington	Saml. Hardwick.
Haslam, W. C., Ripley	Deep, Hard, and Soft.	Pentrich	Ripley	George Bowler.
Hardwick Coal Company, Chesterfield.	Silkstone	Holmewood	Chesterfield	John Ward and Agent.
Hastings, Charles F., Abney	Moira Main	Church Gresley	Burton-on-Trent.	J. T. Woodhouse, Agent. R. E. Cresswell.
Hayes, Thomas, and Company	Ashgate	Old Brampton	Chesterfield	W. F. Howard, Agent.
Hall and Boardman, Burton-on-Trent	Main	Cadley Hill, No. 1	Burton-on-Trent.	William Eley and Agent.
	Woodfield	„ „ No. 2		
		Gresley Wood		
	Woodfield New Mine & Main.	Swadlincote, Nos. 1, 2, and 3.		
Havenhand and Allen	Deep Hard	Apperknowl		Standing.
Heanor and Marlpool Colliery Company.	Comb	Marlpool	Heanor	H. Parsons.
Highmoor Colliery Company, Eckington.	Hazles	Highmoor	Eckington	W. F. Howard, M.E.
Hoskin, Samuel, and Company.	Tupton	Culthorpe	Chesterfield	Herbert Hoskin.
Hewitt, John, Linby, Unstone	Silkstone	Bull Close	Unstone	John Carr.
Holdsworth, Thomas, Clay Cross	Dunsil	Alma	Clay Cross	George Knowles.
	Sinking	Sinking		
Holdsworth and Company Chesterfield	Tupton	Pilsley, No. 1	Chesterfield	Thomas Holdsworth, Agent. Samuel Sodber.
	Deep Hard	„ No. 2		
	Silkstone	„ No. 3		
Hoskin, George, Chesterfield	Ditto	Somersall	Chesterfield	W. F. Howard, Agent.
Holford, W. D., Whittington, Chesterfield.	Ditto	Hill House	Whittington	W. D. Holford and Agent.
Hucknall Huthwaite Company, Mansfield.	Standing	Hucknall Huthwaite.	Mansfield	Standing.
Hutchinson and Saxon	Silkstone	Unstone	Chesterfield	H. Clarke.
Hundall Colliery Company	Ditto	Hundall	Chesterfield	George Kenney. J. Hill, Agent.
Ilkeston Colliery Company	Tupton	Furnace	Ilkeston	John Wilmot Fearn.
	Kilburne	Oakwell		
Industrial Coal Company	Dunsil	Hasland	Chesterfield	G. C. Richards.
	Ditto	Storforth Lane		
Jackson, R. W., and Company	Kilburne	Alton (Old)	Chesterfield	Joseph Buxton. W. F. Howard, Agent.
	Sinking	Sinking		
Jeffcock and Dunn, Sheffield	Silkstone	Birley Railway	Sheffield.	
	Ditto	„ North		
	Deep Hard	„ Parkgate		
Jowitt, J. Mellor, Stockport	Mountain	Chisworth	New Mills	Isaac Marshall.
	Ditto	Mellor		
	Ditto	Alma		
Jowitt and Clayton	Ditto	Simmondsley	Glossop	James Clayton.
Key, William	Tupton	Ripley Road	Ripley	William Key.
Knight, Edward, and Company, Dronfield, Sheffield.	Silkstone	Oxclose	Dronfield	Edward Knight.
Knowles and Company, Whittington, Chesterfield.	Ditto	Forge	Whittington	Israel Knowles.
Knowles, Wright, and Knowles, Chesterfield.	Ditto	New Brampton	Chesterfield	W. F. Howard.
Kirby, Thomas, Eckington	Ditto	Phœnix	Eckington.	
Kirby and Cross, Clay Cross, Chesterfield	Ditto	Cumberland	Clay Cross	E. F. Hall.
	Ditto	Newmarket		
	Tupton	Furnace		
Key and Company			Belper.	
Lancaster and Knowles	Deep Hard	Highfield	Chesterfield	William Adrew.
Lowe, W. D., Denby	Kilburne	Denby	Denby	Uriah Hunt. Richard Purvis, Agent.
	Deep Soft	Salterwood (New)		

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Lowe, Samuel, Chesterfield	Deep Hard	Whitecoats	Chesterfield	W. F. Howard, Agent.
	Waterloo	Wingfield Lane	Clay Cross	
Lower House Colliery Company, New Mills, Stockport.	Mountain	Lower House	New Mills	James Richardson.
Lucas, Messrs., Dronfield	Silkstone	Stubley	Dronfield.	
	Ditto	Manor		
Marehay Colliery Company	Ell	Marehay		Bradley Mart.
Manners Colliery Company, Ilkeston.	Kilburne	Manners	Ilkeston	J. Eaton.
Monkwood Colliery Company	Silkstone	Monkwood (Old)	Chesterfield	John George Wilde.
	Ditto	Barlow Lees		
Moorwood Moor Coal Company.	Sinking	Morwood Moor	Wingfield	Joseph Hall.
Moorwood, C. R. P., Alfreton	Deep Soft	Swanwick (Deep)	Alfreton	J. T. Woodhouse, C. and M.E., Agent. Edwin Eardley.
	Top Hard and Waterloo.	,, (Old)		
Morris, H. W., Totley, near Sheffield.	Mickley	Mickley	Dronfield	W. F. Howard, Agent.
Mundy, Alfred M.	Deep Hard	Newcastle	Shipley	J. T. Woodhouse, C. and M.E. Edwin Eardley.
	Deep Hard and Soft.	Woodside		
	Deep Hard	Nutbrook		
	Sinking	Coppice		
Nadin, Messrs. J. and N., Burton-on-Trent	Woodfield	Woodfield	Swadlincote	George Lewis.
	Main	Main		
	Stanhope	Stanhope		
	Eureka	Eureka		
Naylor, Henry, Chesterfield	Tupton	Brockwell Road	Chesterfield	Henry Naylor.
	Ditto	Newbold Lane		
Newland Coal Company, Eckington	Hazles	Newland	Eckington	Thomas Green.
Newdigate, Lieut.-Col.	Deep Soft	West Hallam	Ilkeston	J. T. Woodhouse, C. and M.E., Agent. Edwin Eardley.
Nichols, William, Chesterfield	Piper	Riber	Brampton	W. F. Howard, Agent.
North Derbyshire Brick-works, Hayfield, Stockport.	Mountain	Mill Brow	Hayfield	Peter Woolley.
Northfield Colliery Company	Deep Soft	Northfield	Shirland	W. F. Howard, Agent.
North Wingfield Colliery Company.	Waterloo	Waterloo	Clay Cross	William Shepherd.
Oakes, J., and Company Alfreton	Sinking	Pollington	Langley Mill.	G. W. Laverick and Agent.
	Silkstone	Blackshale		
	Deep, Hard, and Soft.	Coates Park		
	Ditto	Stonyford		
	Kilburne	Deep Main	Pye Bridge	
	Deep, Hard, and Soft.	Tunnel		
	Silkstone	New Silkstone		
	Black, Grey, and Whetstone Ironstone.	Ironstone, Nos. 1, 2, and 3.		
Oldfield and Company, Chesterfield.	Deep Hard	Cutholme	Walton	W. F. Howard, Agent.
Orwin, George, Newbold, Chesterfield.	Dunsil	Old Dunstan	Chesterfield	George Orwin.
Pearson, Theophilus, Chesterfield.	Deep Hard	Highfield	Ditto	James Ash.
Pearson, George, and Company, Alfreton.	Silkstone	Oakerthorpe	Wingfield	J. W. Eardley.
Plevins, C. H., and Company Newbold, Chesterfield	Ditto	Blackshale	Newbold	Standing.
	Deep Hard	Potters		
Price and Langham	Silkstone	Clay Lane	Clay Cross	Thomas Price.
Proctor, William, Stockport	Mountain	Fernilee	Whaley Bridge	David Etchells.
Plant, John, Birley, Sheffield	Silkstone	Birley Hackenthorpe	Sheffield	Suspended.
Ragg and Company, Swadlincote.	Fire Clay	Clay Pits	Swadlincote.	
Rangeley, Henry, and Son, Unstone, Sheffield.	Silkstone	Drift	Unstone	Wm. Henry Rangeley and Agent.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Renishaw Coal and Iron Company, Chesterfield	Top Hard Ditto Silkstone Ironstone.	Cottam (Old) „ (New) Whittington Ironstone	Eckington	J. F. Thomson and Agent.
Rhodes, Brothers	Silkstone Sinking	Troway Sickle Brook Lane	Dronfield	George White.
Rhodes, James, and Son	Silkstone	Summerley	Unstone	Jonathan Rhodes and Agent.
Rhodes, John	Ditto Ditto	Plumbley New Pit	Eckington	Thomas Higginbottom.
Richardson and Vardy, High Lane, Eckington.	Ditto	White Lane	Ditto	W. F. Howard, Agent.
Robinson, Aaron, Chesterfield	Ditto	Calow	Chesterfield	Aaron Robinson.
Robinson and Company	Belper Lawn	Lawn	Belper	Ditto.
Rutland Coal Company	Deep Soft	Rutland, Nos. 1, 2, 3, 4.	Ilkeston	J. W. Fearn.
Sheard, John, Dronfield	Silkstone	Gomersal	Dronfield	John Sheard, Owner.
Seeley, Charles, and Company, Alfreton	Tupton Deep Hard Silkstone Ditto and Tupton	Tibshelf Ditto Ditto Shady	Alfreton	S. C. Wardell, M.E. and Agent.
Sheepbridge Coal and Iron Company, Chesterfield	Top Hard Deep Hard Silkstone Ditto Ditto Silkstone Ironstone. Ditto	Norwood Sheepbridge Dunston Nesfield Grasscroft Glasshouse Barlow	Eckington. Sheepbridge	William Wilde and Agent.
Shirland Colliery Company, Alfreton	Silkstone Tupton	Shirland, No. 1 „ No. 2	Alfreton	S. H. Swift.
Shirtcliffe, John	Hazle	Killamarsh	Eckington	W. F. Howard, Agent.
Shorthouse and Gregory	Waterloo	Peacock	Ilkeston	G. B. Gregory.
South Normanton Colliery Company, Alfreton.	Top Hard	Winks Bank	South Normanton.	John Hawley.
Small, G. and T., Kilburne, Derby.	Kilburne	Kilburne	Killburne	George Small and Agent.
Stanfield and Company, New Mills, Stockport.	Mountain	Lower House	New Mills	John Hall.
Stanton Iron Company	Kilburne Ironstone	Dale, Nos. 1, 2 Ditto	Stanton Gate	Walter Fowler. William Hopkins, Agent.
Stanley Colliery Company, Derby.	Kilburne	Stanley	Stanley	William Boole.
Staveley Coal and Iron Company, Chesterfield	Silkstone Deep Soft Ditto Top Hard Ditto Silkstone Silkstone Ironstone. Top Hard Sinking	Campbell Hollingwood(Old) „ (New) Seymour Speedwell Springwell Ditto Barlborough Ireland	Staveley	James Campbell. Charles Markham, Managing Director.
Stretton Colliery Company	Tupton	Stretton	Clay Cross	William Barbour.
Shaw, Samuel, Ilkeston	Deep Hard	Norman	Ilkeston	Samuel Shaw.
Shireoaks Colliery Company	Sinking	Southgate	Staveley	Alfred Southall.
Tapton Coal Company Limited, Chesterfield	Silkstone Ditto	Wallsend Locoford	Chesterfield	Philemon Hicks and Agent.
Tymm, J. and N., Marple, Stockport.	Mountain	Bottoms Hall	Marple	J. Tymm.
Tyler and Woodward	Tupton	Gents Hill	Clay Cross	Samuel Tyler.
Unstone Coal and Coke Company, Limited.	Silkstone	Unstone	Unstone	Fenwick, Agent. George Hewitt.
Ward, Brothers, High Lane, Eckington.	Ditto	Birdfield	Eckington	John Ward.
Wass, E. M., Matlock	Mountain	Alderwasley		Suspended.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Wells, Joseph and George, Ecklington, Chesterfield	Silkstone	Silkstone, Nos. 1 and 2	Eckington	W. Edwin Wells and Agent.
	Deep Hard	Park Gate, Nos. 3 and 4		
	Silkstone	Hornthorpe		
	Deep Hard	Park Gate		
	Silkstone	Prince Albert		
	Ditto	Westwells		
	Ditto	High Lane		
	Sinking	New Sinking	Killamarsh.	
West, H. H., Langley Mill	Comb Coal	New Heanor	Langley Mill	J. W. Fearn.
Whittington Coal Company, Chesterfield.	Silkstone	Foxley Oaks	Whittington	W. D. Holford and Agent.
Whittington and Sheepbridge Coal Company	Ditto	Broom Field	Sheepbridge	Joseph Springthorpe.
	Deep Hard	Ditto		
Whitehouse and Son, West Hallam, Ilkeston	Deep, Hard, and Soft	West Hallam, No. 1.	Ilkeston	Joseph Hall.
	Ditto	„ No. 2		
	Ironstone	„ No. 3		
	Kilburne	Kirk Hallam		
Whitworth, W., Chesterfield	Tupton	New Main	Chesterfield	Suspended.
Wingerworth Coal Company, Chesterfield	Deep, Soft	Avenue	Ditto	John Ward and Agent.
	Top Hard	Williamthorpe		
	Ditto	Lings		
Wingerworth Iron Company, Chesterfield.	Tupton	Tupton	Ditto	William Swann. A. Carrington, Agent.
Woodville Fire Brick Company, Burton-on-Trent.	Fire Clay	Clay Pits	Swadlincote	A. Eley.
Woodward, James, Swadlincote, Burton-on-Trent	Ditto	„ Nos. 1 and 2.		
Wright, Wheeldon, and Company, Heage, Belper.	Silkstone	Ripley Road	Heage	Joseph Wright.

NOTTINGHAMSHIRE.

Annesley Coal Company	Top Hard	Annesley, Nos. 1 and 2.	Nottingham	Henry Lewis and Agent.
Arkwright, Robert, Exors., Chesterfield	Ditto	Sutton	Sutton	William Brookes.
Awsworth Iron and Coal Company	Tupton	Furnace	Eastwood	S. Whitehead and Agent.
	Silkstone	Blackshale		
	Piper	Piper		
Barber, Walker, and Company, Eastwood	Deep Hard and Soft.	Brinsley	Eastwood	William Weston. Robert Harrison, Agent.
	Ditto	Cotmanhay		
	Ditto	Eastwood		
	Top Hard	High Park		
	Deep Hard and Soft.	Moor Green		
	Top Hard	Underwood		
	Ditto	Watnall (Old)		
	Ditto	Watnall (New)		
	Ditto	Willey Lane		
Beardsley and Hogg	Comb	Brinsley	Ditto	John Beardsley.
Bestwood Coal Company, Nottingham.	Top Hard	Bestwood, Nos. 1 and 2.	Bestwood	William Read.
Butterley Iron and Coal Company	Ditto	Portland, No. 1	Kirby	Richd. J. Strick and Agent.
	Ditto	„ Nos. 2 and 4		
	Ditto	„ No. 6		
	Ditto	Mexbro' (North)	Selston	
	Ditto	„ (South)		
	Ditto	„ (Bottom)		
	Deep Hard and Soft.	Plumptre	Eastwood	
Digby Coal Company, Eastwood	Deep Soft	Speedwell	Eastwood	Herbert Phillips. — Potter, Agent.
	Deep Hard	Newthorpe		
	Tupton	Digby		
	Sinking	New London		

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Eastwood and Swingler, Derby	Top Hard	Molyneux	Teversall	W. Field Cowen. Gillett and Sankey, Engineers.
Ellis and Company, Nottingham	Ditto	Hucknall, No. 1	Hucknall Torkard.	James Heslop.
	Ditto	„ No. 2		J. W. Ellis, Agent.
Evans, Richard	Deep Soft	Newthorpe Lodge	Ilkeston	William Taylor.
	Ditto	Tunnel		
Isaac, Saul, Esq., M.P., Nottingham	Deep Hard	Clifton, No. 1	Nottingham	Henry Fisher and Agent.
	Deep Soft	„ No. 2		
Knighton and Smith, Eastwood	Top Hard	Springfield	Eastwood	J. Knighton.
Linby Coal Company, Nottingham.	Ditto	Linby	Linby	Henry Lewis and Agent.
Lynch and Cadogan, Cossall, Nottingham.	Piper	Cossall	Cossall	Walter C. Fowler.
Newstead Colliery Company	Top Hard	Newstead	Newstead	Robert Stevenson and Agent.
New and Oldknow, Nottingham.	Deep Hard and Soft.	Wollaton	Wollaton	George Lewis.
Seeley, Charles, and Company, Nottingham	Top Hard	Bulwell	Basford	George Fowler and Agent.
	Ditto	Cinder Hill, Nos. 1 and 4.		
	Ditto	Kimberley, Nos. 1 and 2.		
	Ditto	Newcastle		
	Deep Hard and Soft.	Babbington		
Skegby Coal and Lime Company	Top Hard	Skegby	Mansfield	William Holbrock. Gillett and Sankey, Viewers.
	Ditto	Brierley Hill		
Stanton Iron and Coal Company	Ditto	Teversall, No. 1	Ditto	William Clark and Agent.
	Ditto	„ No. 2		
	Sinking	Pleasley		
	Dunsil	Silver Hill		
Shireoaks Colliery Company	Top Hard	Shireoaks, Nos. 1 and 2.	Shireoaks	C. Tylden Wright, Agent.
	Ditto	Steetley Wood		John Jones.
Stapleford Colliery Company	Kilburne	Stapleford	Stanton Gate	Suspended.

WARWICKSHIRE.

Ammington Colliery Company, Tamworth	Seven-feet and Ryder Coal and Ironstone.	Ammington, No. 1	Tamworth	F. A. Grayston and Agent.
		„ No. 2		
	Ryder Coal and Ironstone.	Glascote		
Ansley Hall Colliery Company, Atherstone	Ryder	Ansley, No. 1	Atherstone	Josias Dobison. R. Smallman, Agent.
	Ell	„ No. 2		
	Seven-feet	„ No. 3		
Bedworth Coal and Iron Company, Bedworth	Seven-feet, Ryder, and Slate.	Woodlands	Bedworth	J. Gorden Addenbrooke and Agent.
	Black Ironstone.	Ironstone, Nos. 8, 10, 11		
Dugdale, W., Atherstone	Rider	Baddesley	Atherstone	John Parker.
Dumolo, T., Tamworth	Seven-feet	Kettlebrook	Tamworth	Davey Thomas.
Gibbs and Canning, Wilnecote, Tamworth.	Fire Clay	Wilnecote	Ditto	John Boonham.
Hawkesbury Colliery Company, Coventry	Ell, Ryder, Slate, Coals, and Blue and White Ironstone.	Hawkesbury	Coventry	Joseph Cunliffe.
		Speedwell		
		New Winnings		
Harris, J. and W. S., Coventry.	Slate	Craven	Ditto	Henry Sanders.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Hockley Hall Colliery Company, Tamworth	Rider Seven-feet WhiteIronstone	Whiteley Seven-foot Ironstone	Tamworth	H. G. Wheeler. R. Mellor, Agent.
Marshall, C., Alvecote, Tamworth.	Seven-feet	Alvecote	Ditto	Edward Hedley.
Morgan, Davis, and Company, Wilnecote, Tamworth.	Ryder	Dost Hill	Ditto	James Davies.
Morris and Shaw, Tamworth	Seven-feet Sinking	Birch Coppice Hall End	Ditto	George Morgan. A. Morris, Agent.
Newdegate, Charles. M.P., Nuneaton	Two-yard Slate Seven-feet	Griff, No. 1 ,, No. 2 ,, No. 3	Nuneaton	J. Harrison. R. C. Webster, Agent.
Nowell and Son, Nuneaton	Slate and Seven-feet.	Haunch Wood	Ditto	William Davis. Nowell, Owner and Agent.
Perrins and Harrison, Wilnecote, Tamworth.	Seven-feet	Wilnecote	Tamworth	Samuel Barton.
Pooley Hall Colliery Company.	Ditto	Pooley Hall	Ditto	John Henshaw and Agent.
Rawlins, John, Nuneaton	Ditto	Nuneaton	Nuneaton	Foster Stenson and Agent.
Skey and Company, Wilnecote, Tamworth	Smithy Seven-feet Bench Seven-feet and Clay.	Tame Valley Ditto Peel New Pit	Tamworth	Simeon Fenn. R. Smallman, Viewer.
Smallman and Company, Nuneaton	Seven-feet Ironstone	Harts Hill Ditto	Stockingford	Humphrey Randle. R. Smallman, Agent.
Stanley Brothers, Nuneaton	Blue Coal - - -	Swann Lane Ditto No. 3	Nuneaton	George Beck.
Wilson, E., Bedworth	Slate Coal and Ironstone. Slate, Ell, and Ryder.	Collycroft Exhall	Bedworth	E. Wilson, Owner and Agent. Amos Elliott.
Wyken Coal Company, Coventry	Slate, Ell, and Ryder. Black and White Subbin.	Walsgrove Ironstone, Nos. 1, 2, and 3	Wyken	Thos. S. Whittem and Agent.

LEICESTERSHIRE.

Appleby Magna Colliery Company, Snareston.	Sinking	Snareston	Snareston	J. E. Mammatt, M.E., and Agent.
Baker, J. W., Heather, Coalville.	Main	Heather	Ibstock	J. W. Baker.
Barry and Co., Woodville, Burton-on-Trent.	Fire Clay	Gresley Works	- - -	G. Lewis, Viewer.
Bagworth Coal Company, Bagworth	Lower Main	Bagworth, Nos. 1 and 2.	Bagworth	George Wilson. George Lewis, Agent.
Boothorpe Brick and Coal Company.	Fire Clay and Coal.	Boothorpe	Swadlincote	Isaac Brooks.
Checkland, Son, and Williams, Donisthorpe.	Moira Main	Donisthorpe	Moira	George Lewis, M.E.
Checkland and Son	Roaster	Coleorton	Ashby	George Lewis, M.E.
Desford Colliery Company, Desford.	Sinking	Lindridge	Desford	J. E. Mammatt.
Ellis, Joseph Joel	Upper Main Lower Main Sinking	Nailstone, No. 1 Ditto No. 2 Ellistown	Bagworth	Thomas Millership and Agent.
Ensor, Edward	Fire Clay	Pool Clay Pits	Woodville	A. Eley.

Owner or Company and Postal Address.	Name of Coal worked.	Name of Mine or Colliery.	Where situated.	Manager.
Green, Thomas, Swadlincote.	Fire Clay -	Potsherd, Nos. 1 and 2.	Swadlincote -	Samuel Wileman.
Hastings, Charles Frederick, Abney, Moira - -	Moira Main -	Reservoir -	Moira -	German Buxton
	Ditto -	Moira - -	Ditto -	
	Ditto -	Oakthorpe -	Ashby -	Thomas Bradshaw.
	Ditto -	Rawdon - -	Moira -	Thomas Bourne
	Nether Coal and Clay.	Blackfordby -	Woodville -	Alfred Eley.
Ibstock Coal Company, Coalville - - - -	Moira Main -	Ibstock, No. 1 -	Ibstock	William Walton.
	Ditto -	„ No. 2 -		
Knowles and Co., Woodville	Fire Clay -	Mount Pleasant Nos. 1, 2, 3, 4, 5, and 10 -	Woodville -	George Lewis, Agent. William Pickering.
	Ditto -			
Lancaster, John, and Company, Ashby-de-la-Zouch.	Cannel -	Heath End -	Stanton Harold	Samuel Lancaster and Agent.
Netherseal Colliery Company	Main -	Netherseal -	Netherseal -	Robert Howe and Agent.
Overseal Colliery Company, Moira.	Ditto -	Overseal - - -	Moira - -	Suspended.
Perry, Captain, Boothorpe -	Ell - -	Plough Flats, Nos. 3 and 4.	Woodville -	W. F. Perry.
Smart, Joseph, and Son, Griffy dam, Ashby.	- - -	Griffy dam -	Ashby.	
South Leicestershire Colliery Company.	Sinking -	- - -	Bardon Hill -	George Lewis, M.E.
Stephenson, G. R., and Company, Coalville - -	Main -	Snibston, No. 1	Coalville -	George Minto. G. L. Vaughan, Agent.
	Middle Sount	„ No. 2		
	Roaster -	„ No. 3		
Swannington Colliery Company - - - -	Moira Main -	Swannington (Old)	Ditto -	W. B. Pendleton.
	Ditto -	„ (New)		
Thompson, Brothers, Woodville.	Fire Clay -	Clay Pits -	Woodville -	A. Eley.
Tugby and Co. - -	Ditto -	„ - -	Ditto.	
Whitwick Colliery Company, Coalville - -	Main -	Whitwick, Nos. 3 and 4	Coalville -	Jonathan Harrison. William Stenson, Agent.
	Minge -	„ No. 5		
	Splent -	„ No. 2		
	Sinking -	Speedwell -		

Coprolite Mines.

In accordance with your instructions I made an examination of the Coprolite Mines in the county of Cambridgeshire with a view of ascertaining whether or not it was expedient to extend to them any or all of the provisions of the Metalliferous Act of 1872, in consequence of the numerous accidents which were reported. On the 30th July my opinion on the subject was fully reported to you.

Assistant Inspector.

Mr. A. H. Stokes, of Derby, has acted as my assistant during the whole of the year; it is due to him to state that he has rendered valuable assistance in seeing the provisions of the Mines Regulation Act have been properly carried out.

I have, &c.,

THOMAS EVANS,
H.M. Inspector of Mines.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the MIDLAND DISTRICT, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
Jan. 12	1	Nailstone - -	Bagworth -	Joseph J. Ellis - -	Joseph Matley -	Datler -	33	Employed ripping roof, when a fall of bind and coal fell from the side	–	1	–	–	–	1
„ 12	2	Mapperley -	Ilkeston - -	Glendon Iron Co. -	John Hebb -	Stallman -	27	After a shot had been fired, the coals not falling, deceased went to pull them down, and they fell upon him.	–	1	–	–	–	1
„ 13	3	Moorgreen -	Eastwood -	Barber, Walker, & Co. -	Geo. Amedro -	Driver -	19	Trying to hole coals, when they fell upon him.	–	1	–	–	–	1
„ 14	4	High Park -	Eastwood -	Barber, Walker, & Co. -	Joseph Clifton -	Loader -	33	Fall of bind whilst loading coal -	–	1	–	–	–	1
„ 18	5	Campbell - -	Staveley - -	Staveley Iron and Coal Co.	William Mather -	Datler -	30	Jumping into cage at pit bottom when in motion.	–	–	–	1	–	1
„ 19	6	Whitwick -	Coalville - -	Whitwick Colliery Co. -	Fredk. Mansfield -	Driver -	16	Kicked by his horse - -	–	–	–	1	–	1
„ 24	7	Linby - -	Nottingham -	Linby Colliery Co. -	Geo. Jacklin -	Sinker -	35	Bricking scaffold in descending the shaft caught on the side, then fell; the sudden jerk drew the bolts, and the scaffold fell to the bottom.	–	–	1	–	–	1
„ 28	8	Ibstock - -	Ibstock - -	Ibstock Colliery Co. -	William Sharpe -	Driver -	15	Fell down in front of his pony, and full tub went over him.	–	–	–	1	–	1
„ 30	9	Bestwood - -	Nottingham	Bestwood Coal Co. -	Robert Oliver -	Sinker -	22	Iron bow of sinking tub broke when descending the shaft, and threw deceased out.	–	–	1	–	–	1
„ 30	10	Dunston - -	Chesterfield -	Sheepbridge Iron and Coal Co.	Henry Green -	Collier -	24	Getting down roof coal when it fell, crushing him.	–	1	–	–	–	1
Feb. 9	11	Cinder Hill -	Nottingham -	C. Seeley & Co. - -	William Lowe -	Ditto -	45	Endeavouring to put his tools on the ascending cage, when it caught and crushed him against the shaft side.	–	–	–	1	–	1
„ 26	12	Ibstock - -	Ibstock - -	Ibstock Coal Co. - -	Saml. Cartwright -	Driver -	15	Replacing a tub on the rails, when the pony started, crushing him between the tub and side of road.	–	–	–	1	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
Mar. 1	13	No. 3 Snibston -	Coalville -	G. R. Stephenson & Co. -	Thomas Hirst -	On-setter -	45	Piece of coal fell from the ascending cage.	–	–	1	–	–	1
„ 9	14	Cally - -	Ripley - -	Butterley Iron and Coal Co.	Joseph Green -	Stallman -	34	Taking out back timber when the roof fell upon him.	–	1	–	–	–	1
„ 11	15	No. 2 Bretby -	Burton-on-Trent	Countess of Chesterfield -	Thomas Greaves -	Ditto -	41	In the act of setting timber when the roof fell upon him.	–	1	–	–	–	1
„ 22	16	No. 1 Tibshelf -	Alfreton -	C. Seeley - -	E. B. Patrick -	Driver -	13	Knocked down by pony and run over by loaded tubs.	–	–	–	1	–	1
„ 23	17	No. 3 Blackwell -	Ditto - -	Blackwell Colliery Co. -	Geo. Berrisford -	Collier -	46	Ripping roof, when bind fell upon him.	–	1	–	–	–	1
April 3	18	No. 6 Clay Cross	Clay Cross -	Clay Cross Iron and Coal Co.	John Butler -	Loader -	20	Lost his road and went into heading containing fire-damp. Place unfenced.	1	–	–	–	–	1
„ 8	19	Peacock - -	Ilkeston -	Shorthouse and Gregory -	Isaac Smith -	Sinker -	58	Loaded sinking tub fell down the shaft.	–	–	1	–	–	1
„ 8	20	Skegby - -	Mansfield -	Skegby Colliery Co. -	George Hall -	Collier -	32	Endeavouring to get on the cage when in motion, ascending from pit bottom.	–	–	–	1	–	1
„ 12	21	Newcastle - -	Basford - -	C. Seeley - -	Robert Hopcroft -	Stallman -	34	Getting coal down, when part fell upon him.	–	1	–	–	–	1
„ 14	22	Mapperley - -	Ilkeston -	Glendon Iron Co. -	James Green -	Ditto -	28	Cutting top coal, having previously taken out the timber.	–	1	–	–	–	1
„ 16	23	Linby - -	Nottingham -	Linby Coa Co. -	Joseph Bailey -	Sinker -	24	Shot missed fire; deceased at work in the bottom of the shaft when it exploded.	–	–	1	–	–	1
„ 22	24	Riddings -	Alfreton - -	J. Oakes & Co. - -	James Northage -	Loader -	31	Fall of bind - - -	–	1	–	–	–	1
May 1	25	Cutthorpe -	Chesterfield -	Hewitt and Hoskins -	Cephas Hoskin -	Sinker -	33	Descended the shaft without a lamp. Overpowered with carbonic-acid gas. Had many times previously been cautioned not to go without a lamp.	–	–	1	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
May 1	26	Bestwood	Nottingham	Bestwood Coal Co.	Obadiah Rogers	Bricklayer	30	At work bricking the shaft when the brickwork above gave way, falling upon him.	–	–	1	–	–	1
„ 3	27	Birley Vale	Sheffield	Jeffcock, Dunn, & Co.	James Maddocks	Loader	21	Loading coals in a heading when the roof fell; had previously been cautioned to set timber.	–	1	–	–	–	1
„ 14	28	Blackwell A	Alfreton	Blackwell Colliery Co.	William Clarke	Holer	21	At work holing when the coals burst over the sprags.	–	1	–	–	–	1
„ 28	29	Grassmoor	Chesterfield	A. Barnes & Co.	John Whitworth	Loader	19	Fall of roof while loading coals.	–	1	–	–	–	1
June 4	30	Cinder Hill	Nottingham	C. Seeley & Co.	Moses Greensmith	Stallman	26	Cutting top coal, which fell, knocking out the timber and allowing the roof to fall.	–	1	–	–	–	1
„ 6	31	Ibstock	Ibstock	Ibstock Coal Co.	Thomas Finley	Datler	25	Deceased and another conveying empty tub down an incline. Got inside. Tub ran away, upsetting and killing deceased.	–	–	–	1	–	1
„ 12	32	No. 5 Griff	Nuneaton	C. Newdigate, M.P.	Joseph Corbitt	Collier	24	Coming up incline. Full tub broke loose and ran into deceased.	–	–	–	1	–	1
„ 16	33	No. 5 Clay Cross	Chesterfield	Clay Cross Iron and Coal Co.	William Brown	Driver	15	Riding on the tubs. Head caught against the roof and threw him off, crushing him.	–	–	–	1	–	1
„ 21	34	Stanton	Burton-on-Trent	J. & N. Nadin & Co.	Anthony Eames	Collier	28	Ascending the shaft with 6 others. Supposed to have had a fit and fell from the cage.	–	–	1	–	–	1
July 7	35	Berristow Lane	Alfreton	South Normanton Colliery Co.	John Slater	Banksman	47	Landing loaded tub. Door at pit top gave way and precipitated deceased down the shaft.	–	–	1	–	–	1
„ 7	36	Eastwood	Eastwood	Barber, Walker, & Co.	Samuel Martin	Stallman	50	Endeavouring to pass by coals which had been holed and sprags taken out, having previously been cautioned not to do so.	–	1	–	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
July 8	37	Teversall	Mansfield	Stanton Iron Co.	George Allsop	Driver	15	Run over by loaded tubs	–	–	–	1	–	1
„ 23	38	Holbrook	Eckington	J. and G. Wells	Peter Gyte	Labourer	48	Removing windlass from the pit top, slipped and fell down the shaft.	–	–	1	–	–	1
„ 23	39	Awsworth	Ilkeston	Awsworth Iron Co.	George Grainger	Deputy	51	Replacing scaffold over the sump at pit bottom, when the cage descended and crushed him.	–	–	1	–	–	1
„ 28	40	Teversall	Mansfield	Stanton Iron Co.	Thomas Hudson	Hanger-on	32	Piece of coal fell down the shaft, and, after striking the empty cage, caught deceased.	–	–	1	–	–	1
„ 30	41	Unstone	Chesterfield	Unstone Coal and Coke Co.	Thomas Allsop	Screen boy	12	Crushed between buffers of railway waggon.	–	–	–	–	1	1
Aug. 13	42	Underwood	Eastwood	Barber, Walker, & Co.	Luke Naylor	Stallman	44	Fall of bind whilst examining roof and sides.	–	1	–	–	–	1
„ 13	43	Wilnecote	Tamworth	Perrins and Harrison	James Alldrige	Ditto	39	Taking down coals when the roof fell and buried him.	–	1	–	–	–	1
„ 25	44	Speedwell	Staveley	Staveley Iron & Coal Co.	Wm. Willshaw	Driver	21	Fell off tub and run over	–	–	–	1	–	1
Sept. 6	45	Albert	Chesterfield	Derbyshire Silkstone Coal Co.	Thomas Sims	Loader	21	Cage came out of conductors and struck the ascending cage.	–	–	1	–	–	1
„ 13	46	No. 4 Clay Cross	Ditto	Clay Cross Iron and Coal Co.	John Stacy	Driver	17	Fell down and full tubs ran over him.	–	–	–	1	–	1
„ 15	47	Springwell (Ironstone).	Staveley	Staveley Iron and Coal Co.	A. J. Horsford	Miner	30	Drawing timber and preparing to fall roof-stone when other timbers gave way, burying him.	–	1	–	–	–	1
Oct. 1	48	Wollaton	Nottingham	Wollaton Colliery Co.	John Bostock	Stallman	21	Drilling out a missed shot	–	–	–	1	–	1
„ 1	49	Langton	Alfreton	Coke & Co.	John Walvin	Holer	19	Endeavouring to pass in front of coals which had been holed and sprags taken out, having previously been warned of the danger.	–	1	–	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875. Oct. 2	50	Pleasley	Mansfield	Stanton Iron Co.	Benjamin Dixey Thomas Brindley	Sinker Ditto	31 40	After lighting two shots in the bottom of the shaft they started to come up, without first steadying the tub; this swinging about the shaft came into violent contact with one of the pumpstays, breaking the handle of the tub and dropping the men into the bottom of the shaft.	–	–	2	–	–	2
„ 4	51	Shireoaks	Worksop	Shireoaks Colliery Co.	John Bedford	Loader	20	Coming down incline in front of loaded tub, slipped down, and tub went over him.	–	–	–	1	–	1
„ 22	52	Oakerthorpe	Alfreton	Geo. Pearson & Co.	Frederick Keeping	Sinker	43	Getting water out of an old shaft. Deceased went down to change the clack of pumps; overcome by carbonic-acid gas, fell out of the tub and drowned before rescued.	–	–	1	–	–	1
Nov. 5	53	Campbell	Staveley	Staveley Iron and Coal Co.	James Sims	Horsekeeper	50	Ringing himself off contrary to rule, and getting on the cage after the signal to go on had been given. Caught by the cage and killed.	–	–	1	–	–	1
„ 11	54	No. 2 Bretby	Burton-on-Trent	Countess of Chesterfield	John Domelo	Stallman	44	Gate road pack neglected to be built. Fall of bind at lip of gate.	–	1	–		–	1
„ 12	55	Ansley Hall	Nuneaton	Ansley Hall Coal Co.	Richard Rushton	Collier	27	Crushed by loaded tub. Coming down steep incline in front of the tub.	–	–	–	1	–	1
„ 12	56	Whitwick	Coalville	Whitwick Colliery Co.	John Hawkesworth	Fireman	21	Clothes caught in spur wheels of the engine and pulled him in.	–	–	–	–	1	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
Nov. 18	57	Swanwick - -	Alfreton - -	C. R. P. Moorewood -	Thomas Geeson -	Collier -	21	Fall of bind; insufficiently timbered.	–	1	–	–	–	1
„ 20	58	No. 1 Hucknall -	Hucknall -	Ellis & Co. - -	George Carrott -	Driver -	14	Driving horse with loaded tubs too fast, and riding on loaded tubs contrary to rule, when the tub ran off the rails.	–	–	–	1	–	1
„ 27	59	Whitwick - -	Coalville - -	Whitwick Colliery Co. -	John Grogan -	Loader -	22	Place insufficiently timbered. Over anxious to get coals, without first setting sufficient timber to secure the stall.	–	1	–	–	–	1
„ 28	60	Ansley Hall -	Nuneaton -	Ansley Hall Coal Co. -	Wm. Chetwyne -	Collier -	27	Fall of bind. Putting in arching at the pit bottom.	–	1	–	–	–	1
„ 29	61	Dunston - -	Chesterfield -	Sheepbridge Iron and Coal Co.	Martin Carter -	Stallman -	43	Knocking out sprags from under the coal, when part of the roof fell.	–	1	–	–	–	1
Dec. 3	62	Unstone - -	Ditto -	H. Rangeley & Son -	Miles Mason -	Labourer -	58	Killed by hoist on the pit bank -	–	–	–	–	1	1
„ 4	63	Blackwell -	Alfreton - -	Blackwell Coal Co. -	William Rodgers -	Collier -	20	Filling a paraffine lamp whilst the wick was lighted. Paraffine caught fire and burnt him.	–	–	–	1	–	1
„ 17	64	Clifton - -	Nottingham -	Saul Isaac, Esq., M.P. -	William Hyson -	Labourer -	46	Ripping the roof, when part of the bind fell upon him.	–	1	–	–	–	1
„ 19	65	Woodville -	Burton-on-Trent	Wm. Barry & Co. - -	George Hassall -	Ditto -	32	Pulling wire rope up the shaft, when it slipped, dragging deceased with it into the shaft.	–	–	1	–	–	1
„ 26	66	Compstall Road -	Stockport -	G. Andrews & Son -	James Ridgway -	Hanger-on -	34	Fall of bind - - -	–	1	–	–	–	1
								Total - - -	1	27	18	18	3	67
								Ironstone death - -						1
								Clay mine death - - -						1
								Deaths in collieries - -						65

Mr. Evans' Report.

REPORT on the working of the METALLIFEROUS MINES ACT of 1872, 35 & 36 Vict. cap. 77., by THOMAS EVANS, Esq., F.G.S.

SIR, Derby, 31st March 1876.

IN accordance with the 20th section of the Metalliferous Mines Act of 1872, I have the honour to transmit my annual report on the working of the said Act of Parliament, so far as relates to the district of which I am the Inspector, that is to say, the counties of Derby, Nottingham, Northampton, and Oxfordshire.

During this year no ironstone has been worked underground in either Northampton or Oxfordshire.

The only mineral worked underground, and which comes within the meaning of the Metalliferous Act, is gypsum, and this is confined to the counties of Derby and Nottinghamshire.

"An Act to amend the Provisions of the Metalliferous Mines Act of 1872, with respect to the Annual Returns from Mines," came into operation on the 2nd of August last. Section one provides that from that date the owner and agent shall, on the 1st day of February in every year, send to the inspector of the district, on behalf of the Secretary of State, a correct return specifying with respect to such mine, for the year ending on the preceding 31st day of December, the quantity in statute weight of mineral, &c., and persons employed, &c.

These returns are confidential; there is no power given by any Act of Parliament to publish the statistics in detail, and the separate returns have been destroyed.

The quantity of gypsum worked during the year 1875 is 75,000 tons, giving employment to 150 persons below ground and 80 above.

Accidents.

No fatal accidents have been reported during the year.

From the commencement of the year 1876, all the mines in North Derbyshire, lead, marble, &c., &c., will be included in the Midland inspection district, and consequently under my charge. This arrangement has been made by Mr. T. Fauny Evans, of Amlwch, and myself, and with your approval.

Mr. A. H. Stokes has acted as my assistant under this as well as the Coal Mines Regulation Act during the whole of the year.

I have, &c.,

THOMAS EVANS,

H.M. Inspector of Mines.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

LIST of MINES classed under the Metalliferous Mines Regulation Act, in Mr. THOMAS EVANS' District, 1875.

Owner or Company and Postal Address.	Name of Mine.	Where situated. Post Town.	Owner, Agent, or Manager.
	GYPSUM MINES.		
Birch and Ryde, Chellaston, Derby	Chellaston	Chellaston	Frank Garratt, Agent.
Goodacre, Brothers	Gotham	Kegworth	George Fox.
Gregory and Robey, Thrumpton, Nottingham	Thrumpton	Trent	Robt. Robey.
Hackett and Company, Chellaston, Derby	Gypsum Mine	Chellaston	Frank Garratt.
Neep and Ward, Gotham, Kegworth	Albert	Gotham	John Neep.
Part, J. C., Derby	Glebe	Chellaston	— Eardley.
Pegg, Harper, and Company, Derby	California	Aston	Charles Forman.
	Aston Home	Chellaston	Ralph Forman.
Stocker and Adames	Gotham	Kegworth	G. Stocker.
Stevens and Son, Aston-on-Trent, Derby	Aston	Aston-on-Trent	John Stevens.
Tomlinson and Salkeld	Gotham	Kegworth	James Fox.
Winser and Company, Gotham, Kegworth	Gypsum, Nos. 1 and 2	Gotham	J. W. Shepperd.

Mr. Wynne's Report.

REPORT on the INSPECTION OF MINES for the DISTRICT comprising NORTH STAFFORDSHIRE, CHESHIRE, and SHROPSHIRE, for the Year ended 31st December 1875.

SIR,

As Chief Inspector of Mines for this district, I have the honor to report to you that during the last year 36 fatal accidents occurred in coal mines, causing the deaths of 89 persons, and 14 accidents in Ironstone mines, causing the deaths of 16 persons.

Although the fatal explosions of firedamp are but three in number, the loss of life is very serious and lamentable, because, in my opinion, most of the accidents of this kind are preventible *and would not occur if the use of blasting powder in fiery mines were prohibited.*

The first took place at Messrs. Goddard's Ash Pit, near Longton, causing the death of one man, who had gone into a heading containing gas, with a defective safety lamp, and the second at Mr. Sparrow's Meir-Hey Colliery, also near Longton, by which two men were killed, whose bodies have not yet been recovered, but twelve other men who were working in the seam above fortunately escaped.

There are several seams worked in these pits, and in some places a quantity of highly inflammable mineral oil exudes from the strata, and it seems beyond a doubt, that this oil was ignited, as the fire raged with such fury that no descent into the mine could be made, and the shaft had to be filled up at once, to cut off the fresh air from the fire, which is now believed to be extinct, and the pit is now being cleared for the purpose of reopening it.

The third was that sad calamity at Bunker's Hill, and as the cause of it is so fully stated, and the way to prevent such explosions so clearly pointed out in Mr. Dowdeswell's Report and my own, I cannot do better than insert copies of them, together with a plan of the mine, as produced at the inquest; but before quitting this melancholy subject, *it is but just to myself to state, that no blame attaches to me for this loss of life by explosions, for I have year after year pointed out the "farce" of using locked lamps, where the most dangerous of all lights is allowed (blasting), and therefore the awful responsibility of sanctioning a course that leads to such terrible losses of life rests on other heads and not on mine.*

It is some satisfaction to know that nothing would induce the proprietors of the Bunker's Hill Colliery to resume the use of gunpowder; but a very natural question arises, "*whether it be advisable to allow these dire calamities to take place, destroying hundreds of valuable lives, which in the opinion of many persons are preventible, by the simple prohibition of the use of explosives in fiery mines?*" or in homely phrase, to "lock the stable door before the steed is stolen."

THE BUNKER'S HILL COLLIERY EXPLOSION.

The reports of Mr. T. Wynne, Inspector of coal mines, and Mr. G. W. Dowdeswell, Q.C., respecting the inquiry into the fatal explosion, on the 30th April last, at Bunker's Hill Colliery, by which 43 lives were lost, have been laid before Parliament. Mr. Wynne, Her Majesty's Inspector, says: "I have the honour to transmit to you a full report of what took place at the inquest on the 43 poor fellows who were killed by the explosion at Bunker's Hill Colliery on the 30th ult. I am much indebted to Mr. Dowdeswell for his able assistance in so clearly bringing out the facts of the case, and I believe he will report to you what in his opinion, is the only mode of avoiding such calamities. For more than 20 years I have been pointing out what a 'farce' it is, to prohibit the use of naked lights in mines, and yet allow powder to be used; and have indulged in the hope that self-preservation would prevail over the more idle method of getting coal by blasting, but I am now satisfied that the only safe course to take, is to prohibit the use of all explosives in coal mines, and in a few years the coal owners would wonder how they could have allowed their coals to be blown to atoms and the roofs shaken as they have been for so many years, and the colliers would find that, having got rid of the impure fumes of powder smoke and the dangers of explosions, together with the comparative safety from falls of roof, they were amply repaid for any extra labour the wedging process entailed. Nothing could more clearly show the advantage of wedging, over the use of powder than the state of the two downbrows of 600 yards each, which effectually withstood the enormous strain which must have been put upon them, by the force with which the air was driven from the seat of the explosion, to the top of

the upcast shaft, for not so much as a hundredweight of coal was blown down in them, or the dips in the slightest degree injured, or indeed was that portion of the levels, which was driven without blasting. The only reason assigned for the change from wedging to blasting was, that Mr. Rigby could not compete with his neighbours, if he wedged his coal and they blasted theirs, so that to meet competition he was obliged to increase production and lessen cost. Mr. Hall, Mr. S. B. Gilroy, and myself, are of opinion, that the explosion was caused by the use of gunpowder; nor indeed could there be two opinions on the subject; and we are of opinion, that the use of powder or other explosives, should be entirely discontinued in fiery mines. Suggestions have been made that all shots should be fired during the night, but to me, it seems a hard case for the firemen, to be turned into a 'forlorn hope,' for the fatal explosion at Ince Hall Colliery last year, shows that even that system, is not a sufficient precaution, for the safety of human life. I think it only proper to instance Bunker's Hill Colliery, as a case forcibly illustrating the superiority of the fan, over other means of ventilating mines, as the engine, with a slight increase of speed (the fan being uninjured), restored the air current almost immediately after the explosion, enabling a party of explorers to enter the workings, to refix the stoppings, recover the bodies, and ascertain the extent of the disaster with the least possible delay. You will see that I do not attribute any blame to anyone connected with the management of the colliery, powder being at present in general use in the district, as are also the small air pipes or tubes for the purpose of conducting the air into the extremities of the workings. Mr. Dowdeswell in his report says: "My attention was principally directed to three points. First, to ascertain the cause of the explosion; secondly, to see whether the requirements of the Mines Regulation Act had been strictly observed; thirdly, whether any feasible precautions could be adopted to avoid such a catastrophe hereafter. Every person who was in the mine at the time of the exposion having perished, the cause of the explosion could only be gleaned from the subsequent examination. The conclusion is irresistible, that the explosion was caused by the firing of a shot in the thirling marked X on the plan, on the east side of the Engine-brow. I cross-examined the witnesses, in order to ascertain whether the rules had been strictly observed, and I am satisfied there had been no infraction of them. The fireman whose duty it was to fire the shot, and who had evidently fired it, was an experienced, steady man, and some of the witnesses proved, that before firing shots, he used to take the proper precautions of carefully testing the neighbourhood with his lamp. But I elicited from them, that the customary mode of igniting the touch-paper of the shot was most dangerous. The fireman, having tested the spot, withdrew to what he considered a place of safety, and there he opened his lamp, some touch-paper was lighted at it, and this was borne alight to the fuze, which was then kindled, and the fireman retired to some spot where the shot could not reach him. In this instance, evidently, the fuze had been kindled, and the man had so retired, and the explosion wa caused by the flame of the blast. A common notion prevails among the miners that there is no danger of an explosion from a shot if it fires inwards, and does not blow out, but this case shows the idea to be erroneous, a large portion of coal having been dislodged by the shot. The source of the gas which exploded must remain to some extent matter of conjecture; but there had evidently been a disengagement of gas from the floor of the mine, in the immediate neighbourhood of this thirling, and Mr. Gilroy was of opinion, that so rapid is its action, that it may have been developed and filled this thirling, which is on the rise, in the short interval between the examination of it by the fireman and the firing of the shot, and in this opinion Mr. Wynne seemed to concur. If this be correct, I can suggest no precautions which will be effectual, should blasting be practised; but whether this be the case or no, the lesson this catastrophe teaches, is, *that either the use of gunpowder in gaseous mines should be altogether prohibited, or, if its use be allowed, the shots should be fired only between the shifts, when the firemen alone are in the mine.* If this course were adopted, such a terrible calamity as the present, could not occur from this cause. I believe it would also tend to security against explosions from other causes. The firing of the shots produces a severe shock, and tends to the sudden development of gas. If the shots were fired, as they would be, immediately the men left the pits, time would be allowed for this development, which would be detected on the examination just before the next shift came down, whereas now it may and doubtless is, sometimes developed, while the men are at work. In the course of the inquiry, it appeared that *this colliery was ventilated by means of pipes. This is certainly, as the jury thought, a defective mode of ventilation;* it seems to be largely on the *increase, and it certainly should be discouraged. Unless it be checked, I fear a danger of explosion will arise which a better system by means of brattice, would prevent.*"

Falls of coal and roof have caused 14 accidents, by which 14 lives have been lost, and compared with the loss of life from this cause in the previous year (23 in number), is a very clear proof that the *making of managers responsible for the absolute safety of the working places in the mine*, has had a very salutary effect, and if the man George Willis (29 on list) had obeyed orders and not removed the prop, his life would not have been lost.

In shafts nine persons have been killed by as many accidents, which compares favourably with the 15 of the year before, and with two exceptions, these appear to be purely accidental and to some extent almost unavoidable. Joseph Philips (19 on the list), contrary to the rule, descended the shaft with one leg hanging outside the bowk; he overbalanced himself and fell to the bottom of the shaft, losing his life by following this reprehensible practice. Another exception was at Sneyd Colliery (31 on list) where the banksman (although noticed by the man in charge to be under the influence of drink) was allowed to attend to the top of a shaft during the night.

PLAN OF THE

BUNKERS HILL COLLIERY

SOUTH EIGHT FEET COAL WORKINGS.

Scale 22 Yards to an Inch.

REFERENCE.

Course of Air ...

Air Pipes & Brattice Cloth

Grits

The Numbers & Crosses refer to

Men & Boys found

The Small Arrows show the direction in which

the Stoppings & Doors were blown

Point of origin of explosion ... ...

MISCELLANEOUS.

Under this head, sixteen lives have been lost, against twelve the previous year, and three only seem to call for special remark.

The case of Thos. Groden at Silverdale (22 on list) was most singular; his duty was to empty the tubs down a shoot at the bottom of a dip, and it is supposed, that in the act of clutching at the tub, to save himself from slipping down the dip, he had caused the tub to "tip up" and squeeze his neck against the roof; the body was found suspended over the edge of the tub, his head being inside the tub.

Francis Podmore (34 on list), an engineman, who was fatally scalded by the bursting of a blow-off pipe attached to a boiler underground, which was in his immediate charge. This pipe at the fracture had been reduced by corrosion to only one-eighth of an inch in thickness, and evidence was given at the coroner's inquest, that deceased had examined it within a month of its exploding, when (it is most probable) the corrosion going on, would be visible, but he had taken no steps towards having it replaced, but reported it to be in working order.

The third (No. 27 on list) occurred at the Donnington Wood Pit (belonging to the Lilleshall Company), on the 11th September, causing the deaths of 11 persons, and was of a most unusual character, the nature of which may be gathered from the evidence given at the inquest and the verdict of the jury.

THE TERRIBLE COLLIERY ACCIDENT IN SHROPSHIRE.

Yesterday the inquest was resumed, at the George Hotel, St. George's, Shropshire, before Mr. Newill, Coroner, on the bodies of the 11 miners who lost their lives last Saturday week, at a pit of the Lilleshall Company's, at Donnington Wood, through the inhalation of poisonous gases. Mr. Thomas Wynne, the Government Inspector of Mines for the district, with Mr. S. B. Gilroy, Assistant Government Inspector, were there on behalf of the Government; and the Lilleshall Company were represented by Mr. Hodges, solicitor, Newport; by Mr. C. Greene, the mines manager at Donnington Wood; and by Mr. A. H. Maurice, the manager of the Prior's Lee portion of the company's mines. Mr. Leake (Shifnal) watched the proceedings for the chartermaster and the banksman.

The first witness examined was a sinker named James Hancox, who had assisted in repairing the pit the day preceding the catastrophe. The ventilation of the mine had then seemed perfect, and there were no extraordinary "smells" perceptible.—Thomas Hart, also a sinker, had gone all round the face of the workings on the Friday, without observing anything unusual in the workings. He had been through the place of the accident three weeks before, and then saw neither smoke nor wet there; only a general dryness.—Henry Guy, chartermaster at the pit, deposed to having examined all the workings of the pit on the Friday, and to having perceived no indications which might arouse suspicions. On the day of the fatality, witness saw the deceased go down into the pit; but having to attend to the lading of timber did not listen for the signal. When no answer was received after the descent of a horse into the mine and there was a cry of "fire" from up the downcast shaft, witness and other men went down into the pit. To reach the deceased, two of whom were in the inset, a special roadway had had to be made. By Mr. Wynne: The precise spot of the accident had not been inspected by witness. There had been a 6ft. tree set near to where the bodies were found. Witness had heard of fires occurring through the accumulation of slack; and knew of boys causing ignitions through using "part candles" in particular places.—Henry Guy, banksman at the pit, testified to the signalling apparatus being in perfect order. Had heard no noise, and had perceived nothing peculiar in the draught of the smoke.—John Torrington, the engineman, thought that more smoke was coming up the shafts on the Saturday, but had regarded this as a consequence of a fire having been lighted by sinkers.—William Pitchford, sinker, had discovered the first two bodies. Where they lay the air was comparatively good, but smoke abounded. The smoke appeared stationary in the inset; but there had been a strong draught until they had "thurled" near the shaft. Witness had never heard of a fall of coal in the airway through which he had passed on the Friday.—Jabez Dorricott, chartermaster of the downcast shaft, said that the air in the workings had always been good, and that not the roof coal, but the clod underneath, in the airway, had lately fallen. Witness believed that the fire had originated in the double "gob." About 26 years ago, he had known of a fire in the upper "gob" in the same field, occasioned through hotness of earth. Formerly it had been the custom to shoot slack into the "gob."—Samuel Oliver, miner, had recovered six bodies, and had then found much, but mostly deleterious, air in the airway.—James Hayward, collier, employed at the pit, saw much smoke issuing from the upcast shaft before the first band of men descended early on Saturday, but considered that it had not acquired unusual density, up to the time the fire was discovered.—George Hayward, collier, was on the bank when the two shifts of men and also the horse descended the mine; but had not seen any signal given.—Mr. Maurice, the manager of the Prior's Lee Colliery, said that he was on the bank of the Donnington Wood pit shortly after the discovery of the fire. He noticed air coming up the upcast shaft and a strong smell of "fire stink." In the inset, the air was so foul that it extinguished the lamp. Near to the end of the bratticing, close to the shaft, the lamp burned; and a slight blue flame, evidently carbonic oxide, played about the light. Witness knew of cases of spontaneous combustion within this coalfield.

Mr. Charles Greene, the manager of the pit, deposed that there had never been any complaints about the ventilation of the pits, or about a fall of roof coal in any way. There was some, but not a great quantity of pyrites in the double coal, which, however, had not been gotten for forty years. Between the present roof of the pit and the old workings there was a thickness of eight or nine feet.

Mr. S. B. Gilroy deposed that he had again inspected the mine where the accident happened, that morning. He had then been able to get round to the air-door, and back to the upcast pit. Upon opening the air-door there was such a rush of poisonous vapour, that it was deemed advisable to close it again. As the fire was yet undoubtedly burning, all that could be done, was to "stank off" the whole of the workings on that side, so as to exclude the air from the fire; and this was being accomplished. His opinion was, *that there had been no explosion*, for the bodies were not disfigured; and, excepting a little dust and soot upon the timber of the mine, *there was an entire absence of the usual phenomena attending underground explosions.* He believed that the deceased men came by their deaths, through inhaling the smoke emitted from the fire in the double coal, where the roof was broken down in the air-way, and that poisonous gases, probably carbonic oxide or carbonic acid gas, or, it may be, both, escaped from the old workings. This was the only feasible hypothesis which he could form with regard to the catastrophe. The cause of the fire was spontaneous combustion, consequent upon pyrites or slack in the double-coal workings, having been fomented and fanned into flame, by sudden connection with the yard-coal workings. All precautions which human foresight could suggest for the safety of the men had been taken, and Mr. Gilroy could not blame anyone.

Mr. Wynne concurred with this evidence. He added that the men had apparently scented danger after they had traversed some distance along the gateway, and that they were overtaken and instantly killed by the poisonous vapours, as they were attempting to escape them. He believed that air had got to the smouldering fire during the Friday night, and created air overhead, and that the flames had burst through the 2 ft. coal.

The coroner, in summing up, said that the accident, though of the most lamentable nature, appeared from the evidence to have resulted from purely accidental causes.

After deliberating in private, the jury recorded a verdict of "Accidental death," adding the rider "that they were of opinion that the signal for the descent of the second band of men had not been given, and that if it had, the men might have been saved."

The coroner read a letter from Mr. Lloyd, the general manager of the Lilleshall Company, expressing their desire to adopt any practical suggestions for preventing a repetition of such lamentable accidents; and also the concern of Earl Granville, the chief proprietor, at the nature of the catastrophe, sympathy for the bereaved widows and children, and a wish by his lordship to relieve their distress. The communication further stated that a plan of raising funds on the company's works, so as to establish the sufferers in a small way of business, had been submitted to the Earl for approval.

Boiler Explosions.

Two have occurred during the past year; each causing one death, in neither case did there appear to have been a scarcity of water or traceable neglect.

At Brookhouse Colliery (No. 25 on list) nine were injured, in addition to the man killed, but these have all recovered.

I subjoin an account of the inquest, which pretty clearly points out the cause of the bursting of this boiler.

THE LATE BOILER EXPLOSION AT BUCKNALL, NEAR STOKE-ON-TRENT.

On Thursday last the adjourned inquest touching the death of William Allcock, which resulted from the explosion of a boiler at the Brookhouse Colliery at Bucknall, belonging to the Chatterley Coal and Iron Company, was held at the Trent Tavern, Bucknall, before Mr. Booth, Coroner. Mr. Wynne, Government Inspector of Mines; Mr. Gilroy, Assistant Inspector; Mr. C. J. Homer, Managing Director to the Chatterley Company; and Mr. Superintendent Kelly, were present. It may be remembered that the boiler exploded on the 18th ult., with terrific and fatal effect, Allcock being killed, and a number of workmen being injured. James Mosedale, the engineman, was seriously hurt; and after the inquest was opened, it was adjourned, so that Mosedale might recover and give evidence, and also that the Government Inspectors might examine the boiler and give evidence.

John White, engineer in charge, was re-called, and in reply to Mr. Wynne, spoke about the boiler having been repaired by Thomas Johnson, one of Messrs. Barrow's men, shortly before the explosion. He had noticed that perhaps about three of the rivet holes had not been driven straight through the old plate and the new patch, but when the repairs were being made he did not see that the rivets were being driven in a crooked way. He told Johnson to mark the holes right.—Mr. Wynne: Then whose fault is it that it was not so done? Witness: It must be the fault of the man who punched them. In reply to the Coroner, witness said that in his opinion the repairs seemed to have been done in a proper and workmanlike manner, there being no leakage at all.—Mr. Wynne: Then you don't think anything of having crooked rivets? Do you think they are right?—Witness: No, I don't say they are right.

Thomas Johnson, boiler maker, in the employ of Messrs. Barrow and Co., and living at Joiners' Square, said, that on Hanley Wakes, Wednesday, the 4th of August, he was sent for, to examine the

boiler at the Brookhouse Colliery. He examined it, and found a small patch over the fire end, which he did not like. He took the plate off and replaced it with a plate 4 ft. by 2 ft. in extent. There were a few rivets which leaked a bit, and he replaced them with new ones, and "corked" the places. On the Saturday following he finished the job, and having filled the boiler with water he called Mr. White to look at it. It did not leak at all.—In reply to the Coroner, witness said that before he began the job a thorough examination of the boiler was made, and the only deficient place was the part over the fire. After the job was completed he considered the boiler all right and in good working condition; there was nothing about it to indicate that it was unsafe. Mr. White was not there when the plate was put on, but was there at the examination, and sounded the boiler with his hammer. He had been a boiler maker about twenty-one years. The boiler was able to bear about 40 lbs. or 45 lbs. working pressure with safety. He did not see any defectiveness in the joints, or any corrosion. He had seen the boiler since the explosion, and he believed it exploded at the end where the plate had been put on; but the plate he put on had not given way at all. There was no sign of weakness or corrosion, where the boiler gave way. There were signs of the boiler being short of water. There was a blue colour at the front end, and that usually indicated shortness of water. The witness, after many questions by Mr. Wynne as to the probable effects of repairing boilers in a particular way, said he thought it was not well in putting on new plates, to drive into the old rivet holes. There might be one or two rivets which would not go direct through the holes, but he did not think that would tend to the cracking of the old plates on the boiler. All the old holes were good, and Mr. White said they would do. Witness admitted that where the boiler was riven away, the bursting was just at the place where the repairs had been made.

James Mosedale, engine driver at the Brookhouse Colliery engine at the time of the explosion, said he was both scalded and otherwise hurt. The explosion happened a little after one o'clock, at which time, he was in the engine-house. The pressure on the boiler was from 40 lbs. to 45 lbs.; he could not tell exactly. He could not say if the valves were blowing off. The boiler was about three parts full, and the pump had been going well ever since he went to look at it, which was only a short time before the explosion. The steam gauge indicated about 42 lbs. then. There was no shortness of water in the boiler, he was certain. The boiler leaked a little before it was repaired, but not after. In his opinion, the boiler was in a good working state. He looked all round after breakfast, and all seemed right.

George Moore, fireman at the colliery, said he was sitting near a boiler a short distance from the one which exploded when the explosion took place. He had left the firehole about ten minutes before. When he looked at the steam gauge just before, it showed the pressure to be between 44 lbs. and 45 lbs. The boiler was about three-parts full of water, and it was blowing off a little, he believed, at the time the explosion took place. He considered the boilers were in good condition.

Mr. S. B. Gilroy, Assistant Government Inspector, reported that he examined the boiler the morning after the explosion. The boiler had taken a longitudinal course, parting at the egg-end joint over the fire, the rent being uniformly across the centre of the rivet holes; the egg-end flying some 200 yards, and the main part of the boiler embedding itself in a heap of ashes, having travelled a distance of 63 ft. Having described the make of the boiler, Mr. Gilroy stated, that he measured in one place 27 in. along the fractured edge, which was considerably oxidised, and another length of 5 ft. in much the same state, with the exception of presenting here and there a crystallized appearance. The remainder of the fracture showed a good ductile fibre, and in other respects the boiler appeared to be in fair working order and well mounted, with safety-valve, steam gauge, and water float. He was of opinion, that, although the flaws he had pointed out might be quite sufficient to account for the explosion (extending, as they did, for nearly half its circumference), *their existence would not necessarily be accompanied by any outward symptom of danger*, as the corrosion might go on without eating *actually through* the plates until the fatal moment, when they could no longer bear the pressure. As an extra precaution, he would suggest that in patching any boiler, *the old edge of the plate to which a patch was to be rivetted, should be cut away (whenever practicable), and fresh holes drilled, so as to give a new rivetting surface.* In reply to the Coroner, Mr. Gilroy said, the fracture might not have been detected at the time the boiler was being examined, with a view to repairs being done. He did not see anything to indicate that there was shortness of water in the boiler at the time of the explosion.

Mr. Wynne, Government Inspector, expressed coincidence with the view of Mr. Gilroy, as to the probable cause of the explosion. *There was not the slightest pretence for supposing, that the boiler was short of water.* He was in some doubt as to whether the explosion did not first start from the place where the repairs had been done. Whoever made those repairs, did them in a most clumsy manner; and *it was unwise to have used the old rivet holes again,* and dangerous for the holes in the plates not to be exactly opposite each other, as when rivets were crooked, as he found about five of the sixty to be, it was not unlikely the old plate would get cracked.

The Coroner having summed up, the jury considered the evidence, and then returned a verdict of "Accidental death."

Above-ground, generally.

These are four in number, but are of the simplest description, and therefore do not call for special remark.

Ironstone Mines.

There have been 14 accidents in these mines, resulting in 16 deaths, but in only one case, does there need any particular remark, for where ironstone is so thick and steep, as it is in some

parts of my district, casualties and sometimes loss of life, must occur whilst raising three millions of tons of so heavy a mineral.

No. 5 on the list was one of those cases that ought not to occur, for if a three link flat chain be properly looked after and carefully examined, any serious defect is certain to be seen long before a breakage is at all likely to take place, and in this case, if the "competent person" had really been a competent person, who did his duty efficiently, the faulty links in the chain must have been detected, but as in most other cases *where the butty system extensively prevails, good order and good discipline cannot be expected.* To prevent, as far as possible, a recurrence of this negligence, the general manager at Lilleshall, has dismissed *all the persons,* to whose neglect this sad accident was traced.

It is a pleasure to me, to be able to state, that *no boy under the age of* 12 *years is now employed underground in this district,* and only 30 under the age of 13 years above ground, and no females under the age of 13 years; but great dissatisfaction prevails amongst colliery proprietors, that boys under 12 should be allowed to work at other occupations, for it is proved by experience, that when a boy has been in a factory for a certain length of time, he objects to going to work underground.

Education is steadily progressing in this district, and school-boards are formed in places where a few years ago, the only schools that existed were purely sectarian, or schools maintained by generous proprietors for the education of their workmen's children; but any one who will look back to his youth, will well remember what a kindly feeling naturally grew up towards his schoolfellows, and how much he disliked the members of any *rival school;* it is therefore *very desirable, that all of one class should be educated together, regardless of religious sect,* which would tend to diminish, if not obliterate, that too prevalent feeling of hostility, which has hitherto existed, between the followers of different creeds in consequence of the schools maintaining this distinction.

I am of opinion that unsectarian teaching would ultimately bring about that which is so desirable, viz., a fusion of all the English speaking subjects of Her Majesty, irrespective of creed or nationality.

I have, &c.
THOMAS WYNNE.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Whitehall, London.

List of Mines in North Staffordshire, Cheshire, and Shropshire.

Name of Colliery.	Postal Address.	Owner or Agent's Name.	Name of Colliery.	Postal Address.	Owner or Agent's Name.
North Staffordshire.					
Common Side	Cheadle	William Malkin.	Bradeley	Burslem	George Moss.
Well Street	Ditto	Ditto.	Chell	Tunstall	Robt. Beswick & Co.
Cross Flats	Ditto	Salt & Co.			
Callow Hill	Ditto	Ditto.	Clanway	Ditto	Clive & Sons.
Dillhorne	Ditto	Ditto.	Goldenhill	Ditto	WilliamsonBrothers.
Lady's Well	Ditto	Wm. Bowers.	Lowlands	Ditto	Ditto.
Woodhead	Ditto	Ditto.	Stonetrough	Ditto	Ditto.
Hazlewall	Ditto	Ditto.	Tower Hill	Ditto	Ditto.
Cheadle	Ditto	Plant & Co.	Yeldhill	Ditto	Ditto.
Ipstones	Ditto	Ditto.	Greenfields	Ditto	William Adams.
Consall	Ditto	Scott & Co.	Furlong	Ditto	H. Meir.
Delphouse	Ditto	Bagshaw & Co.	Packmoor	Ditto	Lawton & Co.
Litley	Ditto	Bolton & Son.	Thursfield	Ditto	Kinnersley & Co.
Park Hall	Ditto	Southall & Co.	Turnhurst	Ditto	Bridgewood & Bate.
Little Above Park	Ditto	Mann & Co.	Wedgewood	Ditto	Wedgewood Coal Co.
Bradley Green	Congleton	J. & T. Bredbury.			
Adderley Green	Longton	Stirrup & Pye.	Lane Ends	Ditto	Ditto.
Bentilee	Ditto	Hawley & Co.	Harriseahead	Ditto	Samuel Taylor & Co.
Mossfields	Ditto	Ditto.	Tileries	Ditto	Thos. Peake.
Willfield	Ditto	Thomas Mellor.	Brownhills	Ditto	Brownhills Mining Co.
Brownsfield	Ditto	Booth & Sons.			
Weston Coyney	Ditto	Walker & Co.	Chatterley	Ditto	Chatterley Iron Co.
Fenton Park	Ditto	Fenton Park Co.	High Lane	Ditto	Ditto.
Florence	Ditto	Duke of Sutherland.	Pinnox	Ditto	Ditto.
			Scotia	Ditto	Ditto.
Foley	Ditto	Goddard & Sons.	Ridgeway	Ditto	Ditto.
Golden Hill	Ditto	Ditto.	Newfield	Ditto	Ditto.
Stone Road	Ditto	Ditto.	Whitfield	Ditto	Ditto.
Old Field	Ditto	Ditto.	Oxford	Ditto	Ditto.
Anchor	Ditto	H. Ashwell.	Apedale	Newcastle	Stanier & Co.
Hulme Valley	Ditto	H. S. Richards.	Silverdale	Ditto	Ditto.
Gainmore	Ditto	Ditto.	Park House	Ditto	Ditto.
Hill Top	Ditto	Hill Top Colliery Co.	Crackley	Ditto	Ditto.
			The Nabs	Ditto	Ditto.
Longton Hall	Ditto	J. & A. Glover.	Holly Wood	Ditto	Ditto.
Ubberley Hall	Ditto	John Harp & Son.	The Grove	Ditto	Ditto.
Mearhey	Ditto	A. Sparrow.	Clough Hall	Ditto	Kinnersley & Co.
Bellsmill	Hanley	Earl Granville.	Kidsgrove	Ditto	Ditto.
Lady's Well	Ditto	Ditto.	Hollin Wood	Ditto	Ditto.
Fargreen	Ditto	Ditto.	Ranscliff	Ditto	Ditto.
Boothen	Ditto	Ditto.	Trubshaw	Ditto	Ditto.
Slippery Lane	Ditto	Ditto.	Bignall Hill	Ditto	Reps. of late J. Wedgewood.
Foxley	Ditto	Ditto.			
Peartree	Ditto	Ditto.	Jammage	Ditto	Ditto.
Joiner's Square	Ditto	Ditto.	Old Hays Wood	Ditto	Miners Association.
Hanley and Bucknall.	Ditto	Hanley & Bucknall Co.	Highcarr	Ditto	J. H. Williamson.
			Knutton	Ditto	W. F. Gordon.
Bucknall	Ditto	Lingard & Johnson.	Old Oak	Ditto	Ditto.
Blakelow	Ditto	Co-operative Co.	Knutton Farm	Ditto	Viggars & Co.
Ivy House	Ditto	Ivy House Mining Co.	Racecourse	Ditto	Ditto.
			Rosemary Hill	Ditto	J. N. Peake.
North Wood	Ditto	Ditto.	Whitebarn	Ditto	John Blaikie.
Townsend	Ditto	Holcroft & Lingard.	Madeley	Ditto	Crewe Coal & Iron Co.
Wetley Moor	Ditto				
Bucknall Church	Ditto		Leycett	Ditto	Ditto.
Bank Top	Burslem	James Ashworth.	Newfield	Ditto	Newfield Colliery Co.
Cobridge	Ditto	Crowe & Co.			
Hamil	Ditto	Reps. of late J. Wedgewood.	Podmore Hall	Ditto	Cooper & Craig.
			Miles Green	Ditto	
Bycars	Ditto	Ditto.	Millbank	Ditto	J. H. Pearson.
Jackfield	Ditto	Plant & Co.	Glass House	Ditto	Chesterton Co.
Newhayes	Ditto	Thos. Wilkinson.	Chesterton	Ditto	Ditto.
Sandbach	Ditto	Watkin & Co.	Highcarr	Ditto	Highcarr Coal Co.
Sneyd Farm	Ditto	Sneyd Colliery Co.	Hemheath	Ditto	Hemheath Mining Co.
Stanfield	Ditto	Stanfield & Hall o'Lee Co.	Berry Hill	Stoke-on-Trent.	Wm. Bowers.
Sneyd Green	Ditto	Stanier & Co.			
Hill Top	Ditto	Hollins & Co.	Hollybush	Ditto	Ditto.
Millhayes	Ditto	Ditto.	The Lawn	Ditto	Chatterley Iron Co.

List of Mines—*continued.*

Name of Colliery.	Postal Address.	Owner or Agent's Name.	Name of Colliery.	Postal Address.	Owner or Agent's Name.
Brookhouse -	Stoke-on-Trent.	Chatterley Iron Co.	Red Hall -	Stoke-on-Trent.	Alfred Pearson.
New Bucknall -	Ditto -	Ditto.	Harecastle -	Ditto -	Bidder & Elliot.
New Ubberley -	Ditto -	Ditto.	Woodshutts -	Ditto -	Ditto.
Biddulph Valley -	Ditto -	Robert Heath.	Lawton - -	Ditto -	Ditto.
Norton - -	Ditto -	Ditto.	Talke-o'-th'-Hill -	Ditto -	New North Stafford Co.
The Grange -	Ditto -	Ditto.			
Ford Green -	Ditto -	Ditto.	Talke Lanes -	Ditto -	Ditto.
Newchapel -	Ditto -	Ditto.	Mitchell's Wood -	Ditto -	Ditto.
Bent - -	Ditto -	Ditto.	Red Cross - -	Biddulph -	George Gaskell.
Audley - -	Ditto -	Rigby & Co.	Park Farm -	Ditto -	Gaskell & Co.
Hayswood - -	Ditto -	Ditto.	Hall-o'-Lee -	Ditto -	Stanfield & Hall o'Lee Co.
Swan - -	Ditto -	Ditto.			
Bunkers Hill -	Ditto -	Ditto.	Newpool -	Ditto -	Cox and Twyford.

CHESHIRE.

Whalley Bridge -	Stockport -	L. and E. Hall.	Dunkirk - -	Dukinfield -	Dunkirk Coal Co.
Adlington -	Stockport -	Jonathan Jowett.	Astley - -	Ditto -	Ditto.
Banksend -	Disley, Stockport.	L. & E. Hall.	Fire Clay -	Ditto -	Hall & Son.
			Victoria - -	Ditto -	J. D. P. Astley.
Bugsworth -	Hayfield, Stockport.	Ditto.	Backspond -	Lyme, Macclesfield.	W. Hewitt.
Burnt Edge -	Ditto -	Ditto.	Bakestone Dale -	Macclesfield	W. Gardiner.
Bredbury -	Stockport -	Bredbury Coal Co.	Eddisbury -	Rainow, Macclesfield.	Jonathan Hully.
Disley - -	Ditto -	S. Maiden.			
Mellor - -	Ditto -	Jonathan Jowett.	Hough Hole -	Ditto -	W. Mellor.
Middlecale -	High Lane, Stockport.	Brocklehurst & Co.	Lymer Clough -	Ditto -	
			Throstles' Nest -	Ditto -	Not working.
Norbury -	Stockport -	Clayton & Brooke.	Pottshrigley -	Macclesfield	Geo. Lambert.
Poynton and Worth	Ditto -	Lord Vernon.	Sponds - -	Lyme, Macclesfield.	James Jackson.
Ringstones -	Whalley Bridge, Stockport.	J. Jackson.	Bayley Field -	Hyde -	T. J. & J. Ashton.
			Hyde - -	Ditto -	Hyde Colliery Co.
Harper's Brook -	Marple, Stockport.	Thos. Wainwright.	Lime Kilns -	Marple -	Wright Tymm.
			Daisy Field -	Hyde -	Mellor & Co.
Robins Clough -	Stockport -	W. & H. Hand.	Neston - -	Neston, Birkenhead.	Neston Colliery Co.
Winterfold -	Adlington, Stockport.	Daniel Kirk.	Brink - -	Macclesfield	B. Cooke.
			Ditto. - -	Ditto -	W. Smith.
Furnace Vale -	Disley, Stockport.		Barro Clough -	Ditto -	
Redacre - -	Stockport -	Geo. Needham.	Dane - -	Longnor, Buxton.	Harrold Hand.

SHROPSHIRE.

Lilleshall -	Wellington	Lilleshall Co.	Lawley - -	Wellington -	Coalbrookdale Co.
Donnington -	Ditto -	Ditto.	Broseley -	Ditto -	Ditto.
Prior's Lee -	Ditto -	Ditto.	Lawley Bank -	Ditto -	Ditto.
Woodhouse -	Ditto -	Ditto.	Lightmore -	Ditto -	Ditto.
Hadley - -	Ditto -	Ditto.	Roughfields -	Ditto -	Ditto.
Stafford -	Ditto -	Ditto.	Ketley - -	Ditto -	Jno. Williams.
Granville -	Ditto -	Ditto.	Waterloo -	Ditto -	Ditto.
Madeley Court -	Ditto -	C. W. Pearce (Agent).	Wigginton Hall -	Oswestry -	Wigginton Hall Co.
			Drill - -	Ditto -	James Hawkins.
Calcutts -	Ditto -	Ditto.	Trefonen -	Ditto -	France & Co.
Broseley -	Ditto -	Ditto.	Shorthill -	Shrewsbury	John Atherton.
Old Park -	Ditto -	Old Park Iron Co.	Hanwood -	Ditto -	Hanwood Coal Co.
Malin's Lee -	Ditto -	Ditto.	Arscott New -	Ditto -	J. Proctor.
Stirchley -	Ditto -	Ditto.	Lebotwood -	Ditto -	R. Preen.
Wombridge -	Ditto -	Executors of Jno. Bennett.	Moat Hall -	Ditto -	
			Ifton Rhyn -	Chirk -	Ifton Rhyn Co.
Horse Leasow -	Dawley, Wellington.		Quinta - -	Ditto -	Quinta Coal Co.
			Moreton Hall -	Ditto -	Moreton Hall Co.
Coalbrookdale -	Wellington	Coalbrookdale Co.	Preesgwyn -	Ditto -	Ditto.
Dawley Bank -	Ditto -	Ditto.	Benthall -	Broseley -	Benthall Pottery Co
Horse Hays -	Ditto -	Ditto.			

List of Mines—*continued.*

Name of Colliery.	Postal Address.	Owner or Agent's Name.	Name of Colliery.	Postal Address.	Owner or Agent's Name.
Coppice - -	Broseley -	W. & J. Evans.	Watsall - -	Ludlow -	J. Patchett.
Fish House -	Ditto -	L. E. Woolstine.	Cleehills -	Ditto -	Summers & Garbutt.
Coniebury -	Ditto -	Thos. Plimley.	Ditto -	Ditto -	Cleehills Coal Co.
Hay Cop Hill -	Ditto -	Hill & Aston.	Boycott - -	Pontesbury	Boycott Colliery Co.
Benthall -	Ditto -	Ditto.	Farley - -	Ditto -	George Edwards.
Ditto -	Ditto -	Evans & Gough.	Dark Lane -	Shifnal -	Heybridge Iron Co.
Jackfield -	Ditto -	Wm. Exley.	Hinkshay -	Ditto -	Ditto.
Arscott -	Longdon (Salop).	Ditto.	Park - -	Ditto -	Ditto.
			Kemberton -	Ditto -	W. R. Anstice & Co.
New House -	Ditto -	Geo. Fenn.			
Castleplace -	Ditto -	Wm. Wild.	Tasley - -	Bridgnorth	—
Frodesley -	Ditto -		Billingsley -	Ditto	Wm. Birchley.
Asterley New -	Ditto -		Harcourt -	Cleobury Mortimer.	Robert Jones.
Madeley Wood -	Iron Bridge	W. R. Anstice & Co.	Asterley -	Minsterley -	Butler & Co.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the NORTH STAFFORDSHIRE, CHESHIRE, and SHROPSHIRE DISTRICT, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
Jan. 12	1	Leycett	Newcastle	Crewe Coal and Iron Co.	John Maden	Doggy	—	Run over on incline	—	—	—	1	—	1
„ 22	2	High Lane	Tunstall	Chatterley Iron Co.	D. Kane	Collier	23	Fall of roof	—	1	—	—	—	1
„ 31	3	Foley	Longton	Goddard and Sons	W. Jervis	—	—	Explosion of firedamp	1	—	—	—	—	1
Feb. 2	4	Meir Hay	Ditto	W. H. Sparrow	T. Sneyd and another.	—	—	Ditto	2	—	—	—	—	2
„ 9	5	Longton Hall	Ditto	J. and A. Glover	Jno. Warren	Collier	—	Fall of roof	—	1	—	—	—	1
„ 24	6	Brookhouse	Hanley	Chatterley Iron Co.	J. Astbury	Ditto	25	Ditto	—	1	—	—	—	1
Mar. 1	7	Harecastle	Stoke	Bidder and Elliot	D. Pace	Labourer	20	Iron plate fell from top of shaft	—	—	1	—	—	1
„ 6	8	Foley	Longton	Goddard and Sons	M. Evans	Collier	29	Fall of roof	—	1	—	—	—	1
„ 11	9	Harcourt	Bridgnorth	Harcourt Colliery Co.	Geo. Jolly	Sinker	47	Brick fell down shaft from bowk	—	—	1	—	—	1
„ 13	10	Foley	Longton	Goddard and Sons	J. Harper	Labourer	43	Lowered into sump and drowned	—	—	1	—	—	1
„ 24	11	Hanley and Bucknall.	Hanley	New Hanley and Bucknall Co.	T. Burrows	Collier	51	Fall of roof	—	1	—	—	—	1
„ 27	12	Clough Hall	Newcastle	Kinnersley and Co.	J. Dale	Ditto	19	Fall of coal	—	1	—	—	—	1
Apr. 16	13	Stonetrough	Tunstall	H. Williamson	Thos. Foulkes	Ditto	66	Fall of roof	—	1	—	—	—	1
„ 17	14	Berry Hill	Stoke	William Bowers	Chas. Hassall	Stoker	—	Boiler explosion	—	—	—	—	1	1
„ 30	15	Bunker's Hill	Kidsgrove	W. Rigby and Co.	R. Jackson and 42 others.	Colliers, &c.	—	Explosion of firedamp	43	—	—	—	—	43
May 1	16	Ketley	Wellington	J. Williams	Thos. Rigby	Banksman	—	Fell down shaft	—	—	1	—	—	1
„ 14	17	Jackfield	Burslem	Thos. Plant and Co.	Thos. Gater	Loader	—	Fall of roof	—	1	—	—	—	1
„ 23	18	Hanley and Bucknall.	Hanley	New Hanley and Bucknell Co.	Henry Critchley	Ditto	—	Crushed by wagon on engine dip	—	—	—	1	—	1
„ 27	19	Great Fenton	Stoke	Stafford Coal and Iron Co.	Josh. Phillips	Sinker	40	Fell out of bowk down sinking pit	—	—	1	—	—	1
June 21	20	Podmore Hall	Newcastle	Cooper and Craig	George Rodgers	Bank rider	—	Killed by wagons running over him	—	—	—	—	1	1
„ 25	21	Waterloo	Wellington	John Williams	Thomas Chum	Collier	37	Explosion of gunpowder	—	—	—	1	—	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
June 26	22	Silverdale -	Newcastle -	Stanier and Co. - -	Thos. Groden -	Dan tipper -	15	Strangled by edge of tub against roof	–	–	–	1	–	1
July 22	23	Sneyd Farm -	Burslem - -	Ditto - -	S. Beasley - -	Sinker -	57	Fell from mouthing to bottom of shaft.	–	–	1	–	–	1
„ 28	24	Broseley -	Wellington -	Hiram Hill - -	W. Lister - -	Collier -	42	Coal fell off side upon him - -	–	1	–	–	–	1
Aug. 18	25	Brookhouse -	Stoke - -	Chatterley Iron Co. -	W. Alcock - -	Banksman -	—	Boiler exploded - - -	–	–	–	–	1	1
„ 26	26	Quinta - -	Oswestry -	Quinta Colliery Co. -	John Ellis -	Waggoner -	60	Crushed by wagon on surface siding	–	–	–	–	1	1
Sept. 11	27	Donnington Wood.	Wellington -	Lilleshall Co. - - -	E. Guy and 10 others.	Colliers, &c.	—	Suffocated by fumes from spontaneous fire in mine.	–	–	–	11	–	11
Oct. 3	28	Ivy House -	Stoke - -	Ivy House Colliery Co. -	James Bailey -	Pumpman -	—	Pump rods broke and knocked deceased down shaft.	–	–	1	–	–	1
„ 20	29	Podmore Hall -	Newcastle -	Cooper and Craig -	George Willis -	Shifter -	—	Fall of roof on his removing a prop	–	1	–	–	–	1
„ 28	30	Audley -	Ditto -	Audley Coal and Iron Co.	James Tomkinson	Collier -	31	Fall of roof in drift - -	–	1	–	–	–	1
„ 30	31	Sneyd - -	Burslem - -	Sneyd Colliery Co. -	Pat. Higgins -	Banksman -	—	Fell down shaft from surface -	–	–	1	–	–	1
Nov. 1	32	Bignall Hill -	Newcastle -	Representatives of the late Jno. Wedgewood.	Aaron Billington -	Fireman -	25	Cage moved as he was entering it and threw him down shaft.	–	–	1	–	–	1
„ 3	33	Harecastle -	Stoke - -	Bidder and Elliot -	Daniel Ellis -	Collier -	40	Fall of coal from side of dip -	–	1	–	–	–	1
Dec. 8	34	Glebe - -	Fenton - -	Challinor and Co. -	Francis Podmore -	Engineman	44	Scalded by bursting of blow-off pipe under boiler.	–	–	–	1	–	1
„ 12	35	Apedale -	Newcastle -	Stanier and Co. - -	Thomas Shenton -	Collier -	33	Fall of coal - - -	–	1	–	–	–	1
„ 30	36	Peacock Hay -	Tunstall -	Francis Amos - -	William Lucett -	Ditto -	56	Fall of roof in dip - -	–	1	–	–	–	1
								Total - -	46	14	9	16	4	89

LIST of the FATAL IRONSTONE ACCIDENTS, and LOSS of LIFE arising therefrom, in the NORTH STAFFORDSHIRE and SHROPSHIRE DISTRICT, during the Year ending 31st of December 1875.

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions.	Falls of Roof.	In Shafts.	Miscellaneous.	Above ground.	Total.
1875.														
Feb. 10	1	Lilleshall -	Wellington -	Lilleshall Co. - -	Wm. Ratcliffe -	Miner -	32	Fall of roof on moving a prop -	–	1	–	–	–	1
Mar. 17	2	Old Park -	Ditto -	Old Park Co. - -	John Hyde -	Ditto -	26	Ditto - - - -	–	1	–	–	–	1
April 17	3	Tileries -	Tunstall - -	Thomas Peake - -	Eli Hassall -	Doorkeeper	12	Crushed by cage at shaft mouthing	–	–	1	–	–	1
„ 20	4	Yeld Hill -	Ditto -	Williamson Brothers -	Joseph Dearden -	Miner -	59	Fall of ironstone - - -	–	1	–	–	–	1
May 29	5	Lilleshall -	Wellington -	Lilleshall Co. - -	W. Hall and two others.	Ditto -	—	Winding chain broke and they fell down shaft.	–	–	3	–	–	3
July 26	6	Clough Hall -	Stoke-on-Trent -	Kinnersley and Co. -	Daniel Gibson -	Waggoner -	16	Fell on iron plate backwards -	–	–	–	1	–	1
Sept. 9	7	Ipstones -	Cheadle -	H. Wilson - -	James Johnson -	Collier -	—	Fall of coal - - -	–	1	–	–	–	1
„ 20	8	Grange -	Hanley - -	Robt. Heath and Son -	Peter Mack -	Miner -	—	Fall of roof in drift - -	–	1	–	–	–	1
Oct. 16	9	Chesterton -	Newcastle -	Stanier and Co. - -	John Broster -	Ditto -	—	Ditto - - - -	–	1	–	–	–	1
„ 19	10	Newchapel -	Tunstall - -	Robt. Heath and Son -	Isaac Lovenbury -	Collier -	—	Ditto - - - -	–	1	–	–	–	1
Nov. 14	11	Ditto - -	Ditto -	Ditto - - -	John Roberts -	Ditto -	—	Ditto - - - -	–	1	–	–	–	1
„ 17	12	Hinkshay -	Wellington -	Heybridge Iron Co. -	Alphonse Lane -	Pony driver	—	Fell before skip in driving and crushed.	–	–	–	1	–	1
Dec. 7	13	Lilleshall -	Ditto -	Lilleshall Co. - -	Samuel Rushton -	- - -	16	Drowned at bottom of shaft by falling out of bowk.	–	–	1	–	–	1
„ 30	14	Mill Hays -	Burslem -	Hollins and Co. - -	Richard Pearce -	Collier -	45	Fall of ironstone - - -	–	1	–	–	–	1
								Total - -	–	9	5	2	–	16

Mr. Brough's Report.

REPORT on the WORKING of the COAL MINES REGULATION ACT of 1872 (35 & 36 VICT. c. 76.) in the SOUTH-WEST DISTRICT, during the year ended the 31st of December 1875.—By LIONEL BROUGH, F.G.S.

SIR, Clifton, 30th March 1876.

IN pursuance of the 48th section of the Coal Mines Regulation Act, I have the honour to present the following relation of the occurrences in my district throughout the year 1875.

The main list, enclosed, shows that, including coal, fireclay, and ironstone, there were 57 separate accidents, and 86 deaths. The produce amounted to 6,437,324 tons, which, divided by 86, exhibits the proportion of 74,852 tons of mineral to one man or boy killed. Then the number of people—34,136—treated in exactly the same manner, proves the ratio to be a life lost for every 397 persons employed. These figures are not equal to those of 1874.

In consequence of strikes and disputes about wages, the large works, for the most part, were idle for months, and of course just in that degree was the hoped-for quantity never realized. Had the same activity prevailed during the first five months as that which was witnessed in the last seven, the year would have been surpassingly good. Even as it was, but for the explosion of fire-damp at New Tredegar in December, my present Report would have been more satisfactory than any I ever yet made in the district.

The non-fatal accidents in coal and fireclay look like being on the increase, but that is more apparent than real. In my last Report I explained the fact of a very slight injury often ending in death, and consequent inquisition. These contingencies induce the managers to send "notice" of everything that occurs, and I believe that in doing so they sometimes avoid a prosecution under the 39th section of the statute. In the year under notice the casualties now spoken of were 292 in number.

Certain written intimations reached my hands in 1875, just in fact as they have done in all time past in this district. But, as I have repeatedly stated, they do not belong to any of our lists, or come under either Act of Parliament. Nevertheless, I must not ignore them altogether, so I am constrained, as usual, to record them here, in the body of the Report. There were eight separate accidents of this class, all attended with fatal consequences, as the following short paragraphs will detail:—

On the 18th of January some boys were in and about the empty coke ovens of a colliery, when a ponderous door fell on a young child, and instantly killed him.

On the 31st of March some miners returning from work at Bwlch-y-garn Pits about midnight, they entered an empty truck, which when started ran wild, and came into contact with others, then in a state of rest, and one man was killed. They had no right whatever to take possession of that truck.

On the 8th of June William Powell, aged 61, when he left his working place underground, commenced vomiting blood, and died in a few minutes. The medical man reported it a death from natural causes.

A man fell down on the railway, and a truck in motion went over him, and he died on the 22nd of June. He was not justified in being on the line, and moreover he was a coker, and employment of that sort is not recognised by the statute.

On the 25th of June a man was found drowned in a pool of water at some brickworks near Caerphilly.

In July Oliver Farr attempted to ride up a surface-incline, in direct violation of the bye-law, and was killed.

Edwin Key fell down dead in front of the pumping engine boilers on the 19th of October; the doctor pronounced it to be heart disease.

On the 24th of October a boy got on the buffer of a truck to have a ride, and was killed. He certainly had no right to be there at all.

Having thus detailed every casualty of the year, the summary of the whole will stand thus :—

Fatal separate accidents in coal and fireclay 54, consequent deaths 83; non-fatal 292, resulting in injury to 310 of the people. Fatal in ironstone 3, attended with 3 deaths; non-fatal in ditto. 8, with injury to 8 of those who were employed. Accidents which do not belong to the Act, 8, killing 8 persons. Total, 365 accidents, bringing about 94 deaths, and more or less harm to 318 of the workmen.

The produce, as already set forth, is 6,437,324 tons, wrought from 408 collieries, fireclay pits and levels, and claybank or ironstone mines.

In my Report for 1874 I was so far privileged as to be able to state that "there was but one death due to carburetted hydrogen in all the year." I grieve to say that it is not in my power to make any such statement for 1875.

A whole cluster of fire-damp accidents took place in the winter of that year in various parts of the kingdom; in Belgium also, and likewise in France. This quick succession or grouping together of explosions almost revives the idea of the "periodicity," of which mention was made in one of my Reports of past years.

Unfortunately some of these disasters fell to my lot, and I will now comment on them in the order of their dates :—

William Mitchel died at the very end of September at the South Liberty Colliery. A heading was ventilated by the obsolete method of wooden trucks, and a heavy fall came and crushed them in such a manner as entirely to cut off the air, but yet that place was not fenced off, nor was a "danger signal" set up. The fireman was too young and inexperienced for such an onerous position. He did not even report the accident. There was nothing to prevent Mitchel or any other person from marching into the heading with a naked candle; the poor fellow did so, in fact, to look for an iron rail or something of that sort, and the gas fired. There could be no other result than death.

The 7th of October is the date of the next calamity of the kind that requires mention. It occurred in the same colliery, but was of graver import than the case just recited, inasmuch as that the loss of life was greater (viz., four persons killed).

"The South Liberty" is a new enterprize, and it may be said to be nearly virgin ground, consequently but very little gas has ever been drained away from the coal. At the inquest there was conflicting evidence as to the quantity of air that passed through that small district before the explosion. I therefore deposed, both before the two coroners at the inquest, and before the county magistrates some few weeks afterwards, that "whatever amount of air they "possessed before the catastrophe took place, was in this instance beside the question; that "the violation of the rule consisted in using no artificial means whatever to guide the air "into that particular working place; and that without *conduction*, it was physically "impossible that it could enter the heading."

The disobedience of the Act of Parliament immediately became obvious to the Bench, and a money penalty was at once imposed.

On the 29th of the same month (October), at Vobster, an explosion unfortunately happened. The colliery is situated at the southern extremity of the vast and valuable Bristol Coalfield. In a corner at the foot of the Mendips, the sharp "anticlinal" has contorted the strata in such manner as to render likely an effusion of gas at any time, in a moment indeed when least expected. This contingency, of course, demands sharp searching ventilation, which it certainly possessed; and also, by means of brattice cloth, the air was directed into every nook and corner; still, a rule was established that no shot should ever be fired without a close search with the Davy lamp all round and about, even to considerable distances, in order to ascertain that everything was safe before the charge was ignited. The bailiff to whom this duty was confided was, I believe, much esteemed and trusted both by the masters and by the colliers themselves. Yet, strange to say, he did not make that conventional inspection, but fired the shot without it, and he and another man fell victims to neglected duty; a third person died some days afterwards from injuries inflicted by the same explosion of firedamp.

This event shows clearly enough that, notwithstanding everything is done that thought and skill can devise, and though every needful appliance is at hand to prevent accident, human fallibility is still so rife among us as sometimes to defeat all our best laid schemes, and all our most carefully framed arrangements for the preservation of life and limb.

The most serious explosion of the year took place at New Tredegar, on the 4th of December, and I believe the best account I can give of it will be to transcribe the evidence of two of the witnesses, and insert what they said, in this part of my annual Report.

Many were examined in Monmouthshire and Glamorganshire, the colliery being situated in both counties, consequently we had two coroners and the same number of juries. They could not, of course, take the evidence simultaneously, therefore it was arranged that one inquisition should immediately follow the other. I will commence with the statement of my assistant :—

NEW TREDEGAR COLLIERY

Plan

SHOWING PORTION OF WORKINGS IN THE

TOP RAS LAS SEAM

Where an Explosion of Gas occurred on the 4th of December 1875 by which 20 men and boys were killed and 4 injured

Scale 11 yards to an Inch.

Reference.

1. Llewelyn Jones
2. Thomas Price
3. Evan Williams
4. Jno Jones
5. Jno Williams
6. Moses Prangley
7. Ethel Edwards
8. Jno Davies
9. Jno Jones
10. Jno Thomas
11. Arthur Thomas
12. Jno Williams
13. Wm Williams
14. Jno Thomas

Badly burnt

A. Saml Jenkins
B. Stephen Selluck
C. Wm Evans
18. Geo Williams
19. Geo Saunders
20. Thos Jno Williams

Burnt

15. Jas James
17. Edwin Hinder

Slightly burnt

16. Thos Evans — *Suffocated*

RECOVERED

F. Jno Pugsley, Escaped alive tho' burnt
E. Aaron Williams — Injured on the night
D. Geo Batton — of the 3rd Dec.r 1875.

EXPLANATION.

Wooden Doors are shown thus ..... D
Canvas Doors C
Direction of Air Current ..... →
The figures in Red show where the dead bodies were found.
The letters show where the injured were found.
The position of a shot-hole fired on the previous night and which caused an explosion of gas and by which 2 men were injured is shown by the letter S.

MAIN ENGINE PLANE

OWEN DAVIS' SLANT

JOSEPH WATKINS LEVEL

OWEN DAVIS' LEVEL

Sump for Water

JOEL ANCOCK'S STALL

GEO. RICHARDS

MOSES PRANGLEY

ARTHUR THOMAS

GEO. WILLIAMS

THOS PRICE

JAS JAMES

JAS JAMES LEVEL

NEW TREDEGAR COLLIERY.

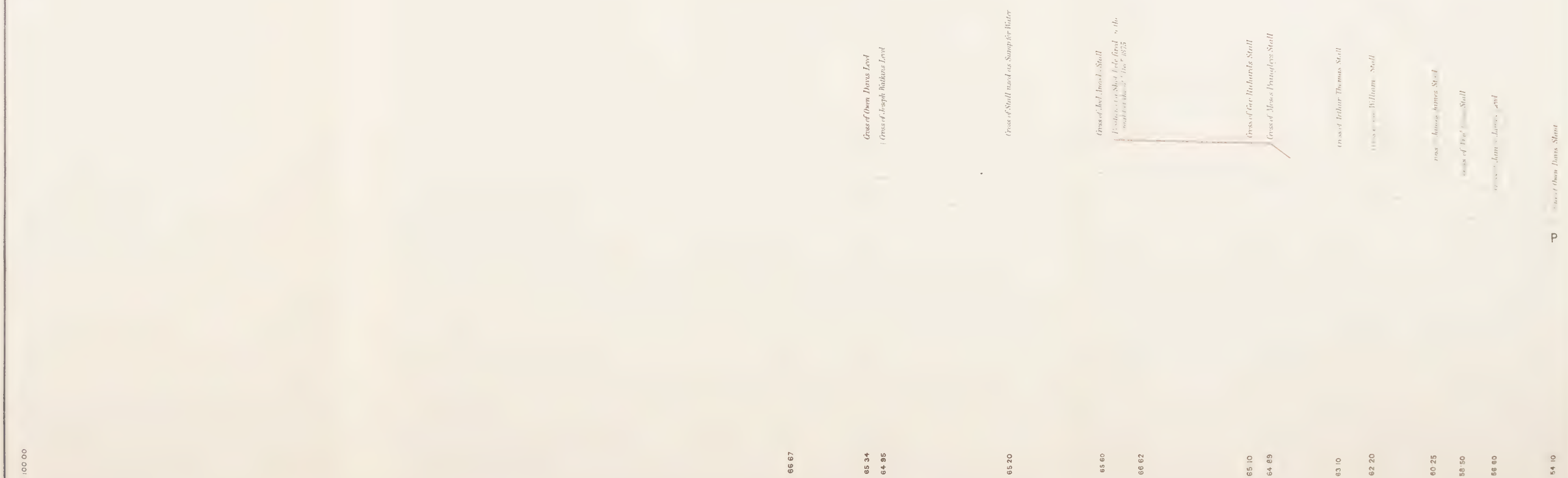
SECTION OF OWEN DAVIS' SLANT FROM M TO P.

Scales.

Horizontal, 11 yards to an inch.
Vertical, 20 feet. do do

M

P



DATUM LINE 100 FEET BELOW CROSS OF TWM CYNI GOS LEVEL.

LIONEL BROUGH, *South Western District.*

Thomas Cadman said,—I am H.M. assistant inspector of mines in the South-western District of the kingdom.

As soon as possible after hearing of the dreadful calamity which had occurred on the 4th December last at the New Tredegar Colliery, I accompanied Mr. Brough to the mine, and with him and at other times made very careful inspections of the scene of the disaster, taking measurements of the quantities of air passing through the workings.

There was comparatively little damage done to the mine by the blast, other than blowing out doors and stoppings, and as soon as the gas was cleared we had no difficulty in going through every place.

I found that there had been two distinct explosions; one on the Friday evening, and the other on the following morning.

There was an old stall road (marked as Joel Ancock's stall on the plan produced), each end of which had been partially stopped off, but to keep it clear of gas a small current of air was allowed to pass through. Some gas accumulated in or near the stall referred to, and was fired by a shot in the main roadway, near the entrance to the old place, burning two men in the next road, I understand, somewhat severely. This explosion occurred on the Friday night.

On reference to the plan you will see that the scene of the explosions consists of a straight main heading, with three working stall roads off it on the right-hand side, and four on the left, with one working face around all. The air coming down the straight road first ventilated Joel Ancock's old stall, and the other three on the right hand, and passing around the bottom of the main heading along the face of coal on the left-hand side joined another fresh split above, and ventilated a few more places, after which it passed direct into a main return.

At first I was of opinion, after hearing of the Friday's explosion, that the second was caused from the same blower still burning in the goaf, a gob fire, or that the gas accumulating from that blower had become ignited by some means in the roads on the right-hand side of the heading. Gas appeared to be given off more rapidly on that side, and although its presence could not be detected in the lamp after the air currents had been restored to their proper courses, yet small blowers could be distinctly heard, and so much gas appearing after the explosion when the air was diverted shows considerable quantities would very soon accumulate there.

The fact, however, that very little damage was done by the blast to the workings led me to the conclusion that the quantity of gas exploded was comparatively small, yet sufficient to destroy 23 lives.

Supposing this to have been the case, it should be another lesson to us in the management of mines to maintain the strictest discipline, and, however small we may believe the quantity of gas given off to be, with sufficient wind and every care taken, assure ourselves that, as far as human forethought can provide, there is no possibility of danger arising from the least quantity of gas exploding.

Following up my examination of the mine I discovered, however, evidences on the faces of coal, sides of roads, timber, &c., of the blast of the second explosion, which occurred on the Saturday morning, having started from the left-hand side, and in passing up the face the coal appeared to have been charred, especially nearly opposite Arthur Thomas' stall, and from there up into Moses Prangley's, where the traces of fire appeared most distinct. Everything around gave evidence of the fire having been more intense in that particular place than anywhere else that I could find. The force of the blast also appeared to have blown out at each end of Moses Prangley's stall in opposite directions, convincing me that the gas was ignited at that point, especially when I considered with this fact the general appearance of the workings.

Having arrived at this conclusion, I next endeavoured to account for an accumulation of gas at that particular part of the workings, supposing there had been sufficient wind given to this district to render harmless noxious gases. At the time of the explosion I found some men were employed in making place for and erecting a wooden door in Moses Prangley's stall in place of the brattice sheet hanging there. These men were at work within a very few yards of the sheet, and in moving backwards and forwards might have partially opened it, or removed it temporarily for their own convenience.

If this had been the case I found that the air by passing direct through this stall would not ventilate either the workings below on the left-hand side of the straight road, or any of the places on the other side, and any gas accumulating would naturally find its way to near the entrance to this stall, that being the highest part of the workings in the district, and most of the roads gradually rising towards that point. This will be better understood by referring to the enlarged plan of the district produced, together with the section of the straight heading, which appear to me to show the place very correctly.

Supposing, then, this to have been the case, and a considerable quantity of gas accumulated near the entrance to this stall, it might have been ignited at that point, and would probably result in the effects we find already existing in the workings caused by the explosion we know to have taken place.

This appears to me to have most probably been the case, and in no other way can I account for all I saw underground.

The whole of the gas exploded may not have been produced at the point where the first explosion occurred; for, supposing Prangley's sheet to have been left down, considerable quantities would have gradually ascended from the other roads, and especially from the place just below this stall on the straight deep, where we have been told gas was regularly given off, and where the sheet was hung up to slightly divert the current of air so as to clear it off, until so much had collected over the roadway on the main heading (as shown by a red line on the section which I have here), and below the entrance to Moses Prangley's stall, where I presumed the air turned in, as would have done the damage found. This would have required but a short time.

It will be noticed on the section that the roof rises very suddenly near the entrance to Joel Ancock's stall, so that some gas might accumulate above the red line, or at all events be protected while passing

gradually along from the main current of air, and not be sufficiently mixed as to become harmless in the very short distance to the entrance to Moses Prangley's stall, where it would be again strengthened by the gas from the other places.

Gas might have been stored in crevices in the roof, and allowed to escape by the effects of the shots fired in the top on the Friday night.

After the coal has been exhausted, however tightly the gob or goaf may be stowed with rubbish, the strata above is sure to settle down to some extent, and in the cracks and openings thus made gas will accumulate, and in many ways may be forced out into the roads at any moment. Gas thus or in any way given off near Joel Ancock's stall would very probably find its way to Prangley's, as we have seen. A current of air sufficient to render harmless all this gas as it was given off gradually, if it had been kept in its proper courses, might in this way be suddenly so charged with gas near an accumulation as to be dangerous for some distance until it had time to mix itself with it. If, therefore, a naked light or a defective lamp happened at this moment to be in or near that place we can thus account for the whole occurrence.

Gas is said to have been given off freely near Ancock's old stall, and probably collected in the joints in the roof causing the first explosion fired by the shot or fuze, and there can be no question as to its having been a great mistake to have allowed the men to enter that district on the Saturday. Blowers will burn very quietly for a considerable time, and are sometimes difficult to discover at once, and quantities of gas may have collected ready to be again ignited, so that time should have been allowed, as well as every examination made, to have ascertained beyond doubt that nothing was on fire in the gob, or that any gas remained there.

With regard to the quantities of air ventilating the mine, I find that altogether on the west side of the pit they have about 20,718 cubic feet per minute, which is split up into several districts; the small district, consisting of eight places where the explosion occurred, has a separate split for itself of about 4,000 cubic feet of fresh air passing per minute. I have made careful inspections in this pit in the course of my duties, and considered it safe and well arranged, the returns being very clear. The impossibility, however, of obtaining a larger quantity of wind by their present ventilating machine, and the workings extending now for a very considerable distance on each side of the shaft, has determined the owners to erect a new fan which will produce a much larger quantity of air, and so provide for future contingencies in further extending their operations.

Safety lamps, as we all know, should only be used as a safeguard in fiery mines against any sudden outburst of gas or other unusual contingency, such as the accumulation of gas through the accidental derangement of the ventilation in some way; and all mines should be so ventilated that in the general order of things no dangerous gas can be detected in the working places. Should any danger present itself through the air being charged with an unusual quantity of gas, the workmen then have warning and time to escape, provided the lamps are closed and in a perfect condition; and I believe if such had been the case in the present instance the men would have escaped by simply attending to the 37th special rule of the colliery. If, however, an exposed light was present, no time was given for this.

Referring to an opinion expressed that the doors in Owen Davis' level might have been left open, if that had been the case it would certainly have taken all the ventilation from this lower district, and the place would have become full of gas in a comparatively short time; but I do not think this was likely to have occurred, as there were two wooden doors on that heading some distance apart, both of which must have been left open to allow the air to pass that way; and further, William Evans, the overman in charge of the mine at the time of the explosion, was on the straight deep within a very short distance of the entrance to Owen Davis' level, and if this had happened he must have detected it at once.

It has also been suggested that the sheet on the main deep might have been left open; but this would have resulted in most of the air passing direct to the bottom of the straight road, and back through the left-hand face, at the same time ventilating the workings on that side in the usual manner, although leaving those on the right hand unventilated.

If, however, the sheet in the first stall on the left-hand side was left down the current of air would turn off the main road, in through that stall to the face, and right away direct to the returns, without clearing this district at all; and further, should the current in any way be suddenly charged, either from a sudden outburst or an accumulation of gas, it would thus carry it direct to the spot where the gas in my opinion was ignited. I also think it more likely that that sheet was left down or partially opened, as the men were working so near it, and it has been said would often pass under it.

There is another fact which points to Moses Prangley's stall, or somewhere very near it, as being the scene of the disaster. It will be noticed that in every direction the further we go from that spot the less the effect of the explosion. For instance, the men in that place and the next below were very badly burnt, while those in the bottom stall and the face of the deep were hardly burnt at all, but are said to have been killed by the after damp.

As to the lamp found with a hole in it, I cannot, of course, give any positive evidence, but if that hole was in the gauze before the explosion it very probably caused the dreadful calamity we are now enquiring into. In any case, however, I am of opinion that the explosion was caused by an exposed light of some kind in Moses Prangley's stall, and that the air turning in there through the sheet being left down was charged with gas, as I have described. It is difficult to account for the occurrence in any other way, and, after very careful consideration, I believe this was actually the case.

Lionel Brough said,—I am Her Majesty's Chief Inspector of the South-western District of the Kingdom. As soon as I heard of the explosion I proceeded into Monmouthshire, and, picking up Mr. Cadman at Newport, we drove together to the pit, and went down it without any delay whatever.

I do not think the disaster was caused by the doors in Owen Davies's level being negligently left open, nor can I for a moment entertain the idea of "gob or standing fire" having had anything to do with the ignition of the damp. During the many hours that intervened between the explosion of gas on Friday (caused by shot firing) and the one next day that occasioned so many deaths (23) any smothering fire would have betrayed itself by the sense of smell. I am compelled, therefore, to fall back, and I do so with very great diffidence, on the hypothesis of the damaged lamp, which has already been exhibited in this room.

There was not a very large quantity of gas exploded; the working places were but little knocked about, with one exception;—I allude to Sprangley's stall and to a portion of that of Arthur Thomas. In this small space there was evidently fierce igneous action, as shown by the coal faces being partially coked, and the brattice cloth was reduced to tinder. In Sprangley's place the "blast" flew both ways, in fact it exercised a powerful radiating force, and for that reason I feel confident that the explosion took place in that very stall.

Subsequent trial with the spirit level showed that spot to be the most elevated point of all the surrounding workings. It was a mound, and the very low specific gravity of carburetted hydrogen tended to its creeping up into such hollow tump or apex.

The men working in the stall would often have occasion to pass under the canvas door, and it is not unlikely that it was so many times down as almost to be said to be really open. There were unquestionably small "blowers" round about that part of the colliery. I both saw them bubbling up through the water, and heard the sound they made most distinctly; there was one three or four yards below Sprangley's stall, and all of them, unless artificially prevented, would naturally drain up into the dome-shaped space already described. Mr. Cadman has in his report gone into the minutiæ, therefore repetition on my part is unnecessary. I may, however, simply add that in round numbers the air passing per minute amounts to 40,000 cubic feet, besides 7,000 feet more for the horses, but this split is not sent into the working faces at all. I may further observe that, in my opinion, the real matter in hand is as regards the ventilation of the part of the colliery where the explosion occurred. It is not much over an acre in extent, and only 20 persons were employed there. The quantity of fresh wind dedicated to this portion of the pit amounted to about 4,000 cubic feet per minute, and I really must say that such a split, properly handled, ought to have been an ample column of air in motion.

The explosion took place in Sprangley's road; that admits of no manner of doubt; and the accumulation of gas, in my opinion, arose from neglect of the "scale sheet" in that very stall. With regard to who or what fired it we arrived at no determinate conclusion. The perforated lamp would be a very important factor indeed if it had but been ascertained to whom it belonged, as then it would have been easily identified with Sprangley's stall, and the entire question would have been solved.

The triangular portion of the workings shown on the accompanying plan is composed of eight stalls, only seven of which were under exploitation, reckoning, of course, from Joel Ancock's down to the extreme (and sharp) angle, and up again to Moses Sprangley's.

All that small portion of ground appears to be rather disturbed, but there is reason to hope that it will be passed through, and that then, probably, more regular strata will be arrived at, and the "blowers" cease to make their appearance.

At each inquest the verdict was in such terms as to be incapable of any other interpretation than that of accidental death.

The column next after Explosion,—"Fall of Roof and Sides,"—is the most serious of them all; for, taking any term of years, five, ten, or twenty, it will be found to record a much higher death-rate than ever "fire-damp" did.

Under this head then (Fall of Material), I am glad to say that 1875 was better than the year that immediately preceded it, just as 32 is to 35. I invariably advocate abundant propping, well and skilfully set up. It is the right remedy or precaution against the many heavy falls occasioned by the wonderfully reticulated "backs," and the concealed slips, that let the strata too often break right over *meagre* timbering.

The third column is dedicated to "Shaft accidents." These were numerous in 1875, but then it must not be forgotton that there has not been for perhaps half a century so many new sinkings simultaneously going on. In the now reported year we are getting deeper and deeper; and it may be said, as far as the sinkers themselves are concerned, that the further we get down, the greater is the liability to danger.

"Miscellaneous underground" has not been immoderate this year, but under the head "Shot Firing," which belongs to the column, it has exhibited painful acts of carelessness, and, what is still worse, of ignorance! To men who have had no experience in blasting, the use of explosives should never be entrusted. I would almost undertake to say that three-quarters of the casualties recorded in the lists of this year touching gunpowder never ought to have occurred at all.

"Surface accidents," the last column of all, was light with me in 1875; but still I perceive that recklessness at "colliery railway sidings" is on the increase as regards empty and loaded trucks. Here, again, the same remarks will apply as those made on "Shaft accidents;" namely, that the opening of so many *new collieries* is attended with additional liability to danger, because of the surface transport of very ponderous pieces of machinery and large quantities of other heavy material, often over mountain roads not always kept in

particularly good repair; consequently there is more liability to accident than during periods of less mining activity.

With regard to education (which is always remarked on in the annual Reports), much has been done for the working classes, so that on that subject there is no more to be said. But, touching managers, it is *now* a necessity that they should study more and more. It is true that we cannot possibly do without practical men; there is no thought of doing so. But mere "rule of thumb," in itself, is not sufficient; it must be accompanied by some acquaintanceship with mathematics, physics, and chemistry. In the conduct of a mine there must be no jumping from premises to conclusions without careful ratiocination. First principles must not only accompany practice, but guide it.

The establishment of Colleges of Physical Science throughout the kingdom will bring about all that we require. The combination of practical skill with a higher order of knowledge will tend to a reduced number of mining fatalities, and to an increase of profit to the proprietors. The Act of Parliament which now rules renders scientific acquirement more exigent than at any other period of the present century.

I enclose schedule of the coal and fireclay fatal and non-fatal accidents; also that of the ironstone fatal and non-fatal accidents; complete list of the carbonaceous mines of the district; list of names of counties belonging thereunto; plan and section of that part of the New Tredegar Colliery that fired in December last; and lastly, the list of the members of the "Board for Examinations;" it is true that the composition of that Board is without change, but is perhaps better to hand it in at the conclusion of every year.

I have the honour to be,
Sir,
Your most obedient servant,
LIONEL BROUGH.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall,
London.

LIST of the FATAL COAL MINE ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH-WESTERN DISTRICT, consisting o MONMOUTHSHIRE, part of BRECONSHIRE, part of GLAMORGANSHIRE, GLOUCESTERSHIRE, HEREFORDSHIRE, WILTSHIRE, and SOMERSETSHIRE, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1874.													
Dec. 5	1	Rhymney -	Monmouthshire	Rhymney Iron Co. - -	William Phillips -	Collier -	32	Fall of stone in Twyn Carno on that date; died 30th March 1875.	–	1	–	–	–
„ 24	2	Tredegar - -	Do. -	Tredegar Iron Co. - -	David Evans -	Do.	42	Crushed by trams on that date in the Patch Level; died 2nd January 1875.	–	–	–	1	–
1875.													
Jan. 6	3	Golynos - -	Do. -	William Richards - -	A. Brampton -	Haulier -	24	Knocked down by horse - -	–	–	–	1	–
„ 25	4	Blaina - -	Do. -	Nantyglo and Blaina Co. -	Charles Tilley -	Collier -	40	Fall of roof in the Henwain Pit -	–	1	–	–	–
„ 23	5	Radstock - -	Somersetshire -	Countess Waldegrave -	B. Button - -	Do. -	24	Fall of stone in the Tinings Pit; died on the 1st February.	–	1	–	–	–
Feb. 3	6	Darkhill - -	Forest of Dean -	Coleford Coal Co. -	William Morris -	Do. -	20	Fall of coal - - - - -	–	1	–	–	–
„ 26	7	Risca - -	Monmouthshire	London & South Wales Co.	William Yaudle -	Haulier -	28	Crushed by trucks on the surface -	–	–	–	–	1
Mar. 2	8	Coalbrook Vale -	Do. -	Coalbrook Vale Coal Co. -	James Thomas -	Collier -	21	} Fall of roof - - - -	–	2	–	–	–
					John Dibble -	Do. -	14						
„ 9	9	Beaufort - -	Breconshire -	Nantyglo and Blaina Co. -	John Palmer -	Do. -	19	Fall of coal - - - - -	–	1	–	–	–
„ 24	10	Old Mills - -	Somersetshire -	William Evans & Co. -	Simon Carter -	Stoker -	30	Fell off steps of pumping engine house -	–	–	–	–	1
„ 30	11	South Wales -	Monmouthshire	South Wales Coal Co. -	Samuel Talbot -	Collier -	22	Fall of roof - - - - -	–	1	–	–	–
April 15	12	Trafalgar - -	Forest of Dean -	Messrs. Brain - - -	Richard Whittington	Do. -	23	Do. - - - - -	1	1	–	–	–
„ 17	13	Dean Lane -	Somersetshire -	Henry Bennett - -	John Hollis - -	Sinker -	–	Injured by explosion of firedamp; died on the 28th of April.	1	–	–	–	–
„ 20	14	Rhymney -	Monmouthshire	Rhymney Iron Co. -	John Jones - -	Collier -	48	Fall of roof - - - -	–	1	–	–	–
„ 28	15	Newbury -	Somersetshire -	Westbury Iron Co. -	George Moon -	Collier -	17	Fall of stone - - - -	–	1	–	–	–
May 3	16	Hengoed - -	Glamorganshire	Thomas and Lewis -	Charles Jenkins -	Tipper -	13	Crushed by trucks on surface - -	–	–	–	–	1
„ 5	17	Blaina - -	Monmouthshire	Nantyglo and Blaina Co. -	William Gwyn -	Collier -	43	Fall of coal - - - -	–	1	–	–	–
„ 8	18	Trafalgar -	Forest of Dean -	Messrs. Brain - - -	George Lane -	Pitman -	45	Fell out of a cart in the shaft - -	–	–	1	–	–
„ 12	19	Braysdown -	Somersetshire -	Braysdown Coal Co. -	Jos. Challenger -	Collier -	22	Fall of rubbish; died on the 13th -	–	1	–	–	–
„ 21	20	Glanddu - -	Glamorganshire	Richard Evans - -	James Price -	Do. -	29	} Fall of top - - - -	–	2	–	–	–
					Josiah Bull -	Do. -	32						
„ 27	21	Risca - -	Monmouthshire -	London & South Wales Co.	A. Whitmarsh -	Do. -	20	Fall of coal - - - -	–	1	–	–	–
June 2	22	Tredegar -	Do. -	Tredegar Iron Co. - -	Ed. Bassett -	Do. -	35	Fall of Stone in No. 5. Pit - -	–	1	–	–	–
„ 9	23	Cwmsychan -	Do. -	Ebbw Vale Iron Co. -	George Hillier -	Do. -	52	Fall of coal; died on 15th - -	–	1	–	–	–

List of Fatal Coal Mine Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1875.													
June 17	24	Rhymney - -	Monmouthshire	Rhymney Iron Co. -	John Owen - -	Collier -	34	Fall of coal; died on 15th - -	–	1	–	–	–
July 7	25	Camerton - -	Somersetshire -	Miss Jarrett -	George Parfitt -	Do. -	36	Fall of stone - - - -	–	1	–	–	–
„ 21	26	Ashton Vale -	Do. -	Ashton Vale Co. -	Thomas Selway -	Do. -	49	Do. - - - -	–	1	–	–	–
„ 23	27	Varteg - -	Monmouthshire	Partridge and Jones -	William Cook -	Do. -	55	Fall of roof - - - -	–	1	–	–	–
„ 24	28	Buckland Dinham	Somersetshire -	Henry Oxley - -	William Maltby -	Sinker -	28	Suffocated; bottom of pit ran in - -	–	–	1	–	–
„ 29	29	Blaenavon -	Monmouthshire	Blaenavon Iron Co. - -	Charles Davis -	Haulier -	31	Fall of clod; died 6th August - -	–	1	–	–	–
Aug. 6	30	New Tredegar -	Do. -	Powell's Duffryn Co. -	M. Keaton - -	Do. -	40	Crushed by trams - - - -	–	–	–	1	–
„ 13	31	Blaina - -	Do. -	Nantyglo and Blaina Co. -	S. Jones - -	Hitcher -	34	Fall of piece of coal from ascending train, in consequence of blundering arrangement of fans.	–	–	1	–	–
„ 19	32	Tillery - -	Do. -	Messrs. Jayne & Co -	Albert Ross - -	Collier -	16	Fell off carriage on surface incline; died on 24th.	–	–	–	–	1
„ 28	33	Risca - -	Do. -	London & South Wales Co.	Robert Stephens -	Sinker -	30	Attempted to jump off bowk before runner was pushed over, and fell back down the pit.	–	–	1	–	–
Sept. 2	34	Cwm - -	Do. -	Crook & Co. - -	David John Powell	Collier -	14	Fall of stone - - - -	–	1	–	–	–
„ 13	35	Nailsea - -	Somersetshire -	White Oak Coal Co. -	John Hicks - -	Sinker -	23	Stone loosened by shot fell out of the wall down the pit.	–	–	1	–	–
„ 14	36	Biaina - -	Monmouthshire	Nantyglo and Blaina Co. -	A. Hall - -	Mason -	27	Fell from bowk while ascending the shaft	–	–	1	–	–
„ 21	37	South Liberty -	Somersetshire -	Ashton Vale Co. - -	William Mitchel -	Collier -	23	Explosion of gas; died on the 29th -	1	–	–	–	–
„ 22	38	Glyn - -	Monmouthshire	Ebbw Vale Iron Co. -	J. A. Cook - -	Door-boy -	12	Playing with others, crawled into some sheaves to hide, when these were started, not knowing he was there.	–	–	–	1	–
Oct. 7	39	South Liberty -	Somersetshire -	Ashton Vale Co. - -	- - - -	- - -	- -	Explosion of firedamp - - -	4	–	–	–	–
„ 8	40	Foxes Bridge -	Forest of Dean -	Foxes Bridge Coal Co. -	Thomas Meek -	Collier -	22	Fall of stone - - - -	–	1	–	–	–
„ 14	41	Ebbw Vale -	Monmouthshire	Ebbw Vale Iron Co. -	Isaac Phillips -	Do. -	19	Fall of coal in No. 8. Colliery - -	–	1	–	–	–
„ 21	42	Abercarn - -	Do. -	Do. - -	John Woodruff -	Do. -	47	Fall of roof - - - -	–	1	–	–	–
„ 26	43	Blaina - -	Do. -	Nantyglo and Blaina Co. -	James Webb -	Haulier -	21	Crushed by trams; died 14th November	–	–	–	1	–
„ 29	44	Vobster - -	Somersetshire -	Vobster Coal Co. - -	Henry Hamblin -	Bailiff -	42	Explosion of firedamp, killing the first two at once, but Leonard Pudfield lived until the 5th November.	3	–	–	–	–
					Thomas Chambers	Collier -	27						
					L. Padfield - -	Do. -	30						
„ 29	45	Frog Lane -	Gloucestershire	Sir Greville Smith, Bart. -	S. Giffard - -	Haulier -	19	Fall of roof - - - -	–	1	–	–	–
Nov. 9	46	Mardy - -	Monmouthshire	Rhymney Iron Co. - -	Noah Abraham -	Collier -	24	Do. - - - -	–	1	–	–	–

List of Fatal Coal Mine Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above ground.
1875.													
Nov. 27	47	Risca - -	Monmouthshire -	London & South Wales Co.	John Herbert -	Sinker -	25	Fell out of bowk in coming up, through signal being mistaken by banksman.	–	–	1	–	–
Dec. 1	48	Darran - -	Glamorganshire	Rhymney Iron Co. - -	George Brocklington	Hitcher -	27	Piece of coal fell from ascending tram; he died next day.	–	–	1	–	–
„ 4	49	New Tredegar -	Monmouthshire	Powell's Duffryn Co. -	Twenty-three persons killed by explosion of fire-damp - - - -				23	–	–	–	–
„ 6	50	Vobster -	Somersetshire -	Vobster Coal Co. - -	Henry Mitchel -	Carter -	15	Fall of stone - - -	–	1	–	–	–
„ 10	51	Wingfield - -	Glamorganshire	Bevan and Pryce - -	J. B. Davis - -	Collier -	23	Fall of clod; he died on 14th -	–	1	–	–	–
„ 11	52	Lightmoor -	Forest of Dean -	Crawshay and Sons -	Thomas Herbert -	Labourer -	53	Crush of trucks on surface; he died on 23d.	–	–	–	–	1
„ 18	53	Varteg Hill -	Monmouthshire	J. Vipond and Co. - -	Joshua Jefferies -	Haulier -	36	Fell under trams - - -	–	–	–	1	–
„ 21	54	Kingswood -	Gloucestershire	Wethered and Cossham -	William Birchell -	Collier -	24	Fall of clod; died on 27th - -	–	1	–	–	–

Total number of deaths - - - 83

List of Fatal Coal Mine Accidents—*continued.*

RECAPITULATION.

Total number of fatal accidents in coal and fireclay in 1875	54
Total number of persons who lost their lives by those 54 separate accidents	83
Whereof 32 deaths were caused by explosion of fire-damp.	
„ 32 deaths were brought about by falls of coal and stone.	
„ 8 deaths took place in pit shafts.	
„ 6 deaths arose from miscellaneous causes underground.	
„ 5 deaths happened on the surface.	
Total - 83 deaths, as enumerated and described in the Lists.	

Comparative Table of the last Four Years.

In 1872,	6	persons lost their lives by explosions of gas, and the total number from all causes (fire-damp included) amounted to	-	-	-	63
„ 1873,	7	„	„	„	„	69
„ 1874,	1	„	„	„	„	64
„ 1875,	32	„	„	„	„	83

Non-fatal Accidents in Coal Mines, in respect of which written "Notices" were sent to the Inspector during the Year 1875 = 292.

These 292 occurrences were attended with injury to 310 of the persons employed in the district in manner as tabulated below:—

There were 11	explosions of fire-damp,	whereby	11	men and boys	were burned or otherwise injured.
„ „ 134	falls of coal and stone,	„	143	„	underwent fracture of bone or suffered from contusion.
„ „ 25	accidents in shafts,	„	26	„	sustained injury more or less severe.
„ „ 89	„ from "miscellaneous causes underground."	„	93	„	became incapable for a time of earning daily wages.
„ „ 33	„ on the surface	„	37	„	were wounded or bruised.
Total - 292	accidents,	„	310	persons	received injury to some extent or other.

Lionel Brough,
Inspector of the Coal and Fireclay Mines of the District.

List of the Fatal Accidents in Ironstone Mines worked under "The Coal Mines Regulation Act," in the South-western District, consisting of Monmouthshire, part of Glamorganshire, portion of Breconshire, Forest of Dean, Gloucestershire, South of Severn, and Somersetshire, during the Year ended the 31st December 1875.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions.	Falls of Iron-stone and Roof.	In Shafts.	Miscellaneous.	Above ground.
1875.													
Feb. 27	1	Gwain fawr -	Monmouthshire	Rhymney Iron Co - -	William Smith -	Trapper -	60	Fall of roof - - - -	–	1	–	–	–
June 1	2	No. 2. Mine Pit	Do. -	J. Vipond & Co. (Limited)	Richard Alms -	Haulier -	40	Knocked down by horse; died on the 3d	–	–	–	1	–
Dec. 3	3	Gwain fawr -	Do. -	Rhymney Iron Co. -	John Davis - -	Miner -	18	Killed by firing a shot; contrary to direct orders.	–	–	–	1	–
									–	1	–	2	–

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RECAPITULATION.

Total number of fatal accidents in ironstone mines in 1875 - - - - 3
Total number of persons who lost their lives by these accidents - - - - 3
Whereof 1 death was caused by a fall of roof.
„ 2 deaths were caused by miscellaneous accidents underground.

Total 3 deaths, as described in the List.

Comparative Table of the Last Four Years.

In 1872, 8 persons lost their lives.
„ 1873, 3 „ „
„ 1874, 7 „ „
„ 1875, 3 „ „

Non-fatal Accidents reported to the Inspector in Ironstone Mines.

6 accidents by falls of stone underground, whereby 6 persons were injured.
1 accident by crush of trams „ 1 person was injured.
1 accident on surface „ 1 do. do.

Total - 8 accidents „ 8 persons were more or less injured.

Lionel Brough,
Inspector of the Ironstone Mines of the District.

COAL MINES REGULATION ACT.

LIST of COAL, IRONSTONE, and FIRECLAY MINES in the SOUTH-WESTERN DISTRICT.

No.	Name of Mine.	Where situated.	Owner's Name.
1	Aberberg	Monmouthshire	Powell, Brothers.
2	Abercarn, No. 1	Ditto	Ebbw Vale Iron Co.
3	Abercarn Black Vein	Ditto	Ditto.
4	Arall	Ditto	Latch & Co.
5	Argoed	Ditto	Tredegar Iron Co.
	Abersychan :—		
6	Cwmsychan	Ditto	Ebbw Vale Iron Co.
7	Cwmnantddû	Ditto	Ditto.
8	Peter's Pit	Ditto	Ditto.
9	Big Pit	Ditto	Ditto.
10	Glannantddû	Ditto	Ditto.
11	Greenland	Ditto	Ditto.
12	Cwmbwrgwm	Ditto	Ditto.
13	Barcella	Ditto	Latch & Co.
14	Blaencuffin	Ditto	Powell, Brothers.
	Blaendare :—		
15	Lower Level	Ditto	Blaendare Coal Co.
16	Clay Slope	Ditto	Ditto.
17	Glyn Level	Ditto	Ditto.
18	Bryngwyn	Ditto	W. S. Cartwright.
19	Bush	Ditto	Bush Coal Co.
20	Berris	Ditto	T. Stroud.
21	Bovil	Ditto	Brewer and Son.
22	Bovil Sun Level	Ditto	Ditto.
	Blaenavon :—		
23	Hill	Ditto	Blaenavon Iron Co.
24	New Pit	Ditto	Ditto.
25	Garn	Ditto	Ditto.
26	Coity	Ditto	Ditto.
27	Dodd's Slope	Ditto	Ditto.
28	New Slope	Ditto	Ditto.
29	Kay's Slope	Ditto	Ditto.
30	Wainavon Slope	Ditto	Ditto.
31	Forge Pit	Ditto	Ditto.
32	Cinder Pit	Ditto	Ditto.
33	Old Coal Pit	Ditto	Ditto.
34	Balance Pit	Ditto	Ditto.
35	Tunnel Level	Ditto	Ditto.
36	Coity Level	Ditto	Ditto.
37	Patch Level	Ditto	Ditto.
38	Blaencwm	Ditto	W. E. Thomas.
39	Blaensychan	Ditto	T. Evans.
40	Brynisgawen	Ditto	W. Moore.
41	Bryn	Ditto	E. J. Williams.
42	Cefn Llwyna	Ditto	W. and E. Beddoe.
43	Cefn-y-Crib	Ditto	W. E. Thomas.
44	Coalbrook Vale	Ditto	Coalbrooke Vale Co.
45	Coedcaetillery	Ditto	P. S. Phillips.
46	Cwmglo	Ditto	Bedwas & Llantwit Co.
47	Cwmbran	Ditto	Patent Nut & Bolt Co.
48	Cwm	Ditto	J. Crook & Co.
49	Cwmdarran	Ditto	Nicholas & Johnson.
50	Cwmnantygroes	Ditto	Clapp and Williams.
51	Cwmbran Coal and Clay	Ditto	H. Parfit.
52	Cwmgelly	Ditto	D. Thomas.
53	Celynen	Ditto	Newport Abercarn Co.
54	Cefn Nantmelin	Ditto	A. Stroud.
55	Cwmfrwdoer	Ditto	Pontypool Coal & Brick Co.
56	Cwmnantddû	Ditto	E. Jones.
57	Cwmbyr	Ditto	H. Green.
58	Durban	Ditto	J. P. Price.
59	Ellid	Ditto	Beynon & Co.
	Ebbw Vale :—		
60	No. 1 Tunnel	Ditto	Ebbw Vale Iron Co.
61	No. 2 „	Ditto	Ditto.
62	No. 3 „	Ditto	Ditto.
63	No. 6 Pit	Ditto	Ditto.
64	No. 8 „	Ditto	Ditto.
65	No. 9 „	Ditto	Ditto.
66	No. 11 „	Ditto	Ditto.
67	No. 12 „	Ditto	Ditto.
68	No. 13 „	Ditto	Ditto.
69	No. 15 „	Ditto	Ditto.

LIST under the COAL MINES REGULATION ACT—*continued.*

No.	Name of Mine.	Where situated.	Owner's Name.
	Ebbw Vale—*cont.*		
70	No. 19 Pit	Monmouthshire	Ebbw Vale Iron Co.
71	No. 22 „	Ditto	Ditto.
72	Forge Level	Ditto	Ditto.
73	Soap Vein Level	Ditto	Ditto.
74	Fireclay „	Ditto	Ditto.
75	Black Pin „	Ditto	Ditto.
76	Farm „	Ditto	Ditto.
77	Waun Llwyd	Ditto	Ditto.
78	Gwrhay	Ditto	Exors. of Roger Lewis.
79	Greenwood	Ditto	Temple Stroud.
80	Gellydeg	Ditto	Kenway & Wyatt.
81	Gellydeg	Ditto	Prosser & Co.
82	Gilfach	Ditto	Latch & Cope.
83	Glyngaer	Ditto	E. D. Williams.
84	Glynsychan	Ditto	John & Phillips.
85	Golynos	Ditto	W. M. Richards.
86	Golynos Slope	Ditto	Ditto.
87	Gwailodywain	Ditto	Bevan and Pryce.
88	Gwerna	Ditto	Nurse and Phillips.
89	Gelly Groes	Ditto	Kenway & Wyatt.
90	Gelly	Ditto	Darby and Morris.
91	Gilwain	Ditto	D. Matthews.
92	Gelly haf	Ditto	D. Williams & Co.
93	Hollybush	Ditto	E. D. Williams.
94	Hafod Van	Ditto	J. P. Price.
95	Hafod Trisglod	Ditto	Ditto.
96	Henllis	Ditto	Hill & Co.
97	Hope	Ditto	Powell, Brothers.
98	Llanhilleth	Ditto	Ditto.
99	Llandaval	Ditto	J. Stanfield.
100	Llanarch	Ditto	R. S. Pugh.
101	Main Cwmbran Adit	Ditto	Patent Nut & Bolt Co.
102	Mamhole	Ditto	Wm. Stewart.
103	Milfrain	Ditto	Jayne & Co.
104	Maescwmmer	Ditto	Togarmah Rees.
105	Mynyddysllwyn	Ditto	E. Jones.
106	New Waterloo	Ditto	Bevan and Pryce.
	Nantyglo and Blaina :—		
107	Henwain	Ditto	Nantyglo and Blaina Co.
108	Sun	Ditto	Ditto.
109	Griffin	Ditto	Ditto.
110	Globe	Ditto	Ditto.
111	Wainavon	Ditto	Ditto.
112	Winches	Ditto	Ditto.
113	Meyrick	Ditto	Ditto.
114	Ellwood	Ditto	Ditto.
115	Upper Deep	Ditto	Ditto.
116	Lower Deep	Ditto	Ditto.
117	Three Quarter	Ditto	Ditto.
118	Nantyglo do.	Ditto	Ditto.
119	Nantyglo Deep Pit	Ditto	Ditto.
120	Stable	Ditto	Ditto.
121	Tunnel	Ditto	Ditto.
122	Yard Level	Ditto	Ditto.
123	Rigby	Ditto	Ditto.
124	Wain	Ditto	Ditto.
125	Well	Ditto	Ditto.
126	Morgan's Level	Ditto	Ditto.
127	Forge	Ditto	Ditto.
128	Owen's Level	Ditto	Ditto.
129	Watkin's Level	Ditto	Ditto.
130	Morris Level	Ditto	Ditto.
131	William's Slope	Ditto	Ditto.
132	Evans' Slope	Ditto	Ditto.
133	Morgan's Little Pins	Ditto	Ditto.
134	Black Pins	Ditto	Ditto.
135	Jones' Red Vein	Ditto	Ditto.
136	Coke Yard	Ditto	Ditto.
137	New Tredegar	Ditto	Powell's Duffryn Co.
138	Old Engine	Ditto	Coalbrook Vale Coal Co.
139	Old Pentwyn Mawr	Ditto	D. Harris & Co.
140	Old Cwmdous	Ditto	T. Stroud & Co.
141	Old Bedwas	Ditto	Thos. Thomas.

List under the Coal Mines Regulation Act—*continued.*

No.	Name of Mine.	Where situated.	Owner's Name.
142	Penner	Monmouthshire	Thos. Thomas.
	Pontypool Works :		
143	Glyn Pits	Ditto	Ebbw Vale Iron Co.
144	Cwmlucu	Ditto	Ditto.
145	Glyn Level	Ditto	Ditto.
146	Place (Old)	Ditto	Messrs. Prothero.
147	Place (New)	Ditto	Ditto.
148	Place (Lower)	Ditto	Ditto.
149	Pantglaes	Ditto	J. Morgan.
150	Penyvan	Ditto	J. Stanfield.
151	Pontygwaith	Ditto	——
152	Penwaingoch	Ditto	E. D. Williams.
153	Plas Bedwellty	Ditto	Trustees of late T. Prothero.
154	Rhiw Park	Ditto	W. Stewart.
155	Rhôs Wen	Ditto	Bevan & Pryce
156	Risca Brick Works	Ditto	Francis Jones.
157	Risca Black Vein	Ditto	London & South Wales Co.
158	Risca Rock Vein	Ditto	Ditto.
159	Risca Clay Level	Ditto	Ditto.
160	Risca New Pits	Ditto	Ditto.
161	Rock	Ditto	Marsh, Brothers.
	Rhymney Works :—		
162	Mardy	Ditto	Rhymney Iron Co.
163	Yard	Ditto	Ditto.
164	Lower Level	Ditto	Ditto.
165	Upper Level	Ditto	Ditto.
166	Gwainfawr	Ditto	Ditto.
	South Wales :		
167	Cwmtillery Pit	Ditto	South Wales Coal Co.
168	Cwmtillery Level	Ditto	Ditto.
169	Rose Heyworth	Ditto	Ditto.
	Sirhowy :		
170	Engine Colliery	Ditto	Ebbw Vale Iron Co.
171	Fireclay	Ditto	Ditto.
172	No. 2 Colliery	Ditto	Ditto.
173	No. 4 „	Ditto	Ditto.
174	No. 5 „	Ditto	Ditto.
175	No. 7 „	Ditto	Ditto.
176	No. 8 „	Ditto	Ditto.
177	No. 9 „	Ditto	Ditto.
178	Building Stone Level	Ditto	Ditto.
179	Trelyn	Ditto	J. Morgan.
180	Ty-y-berth	Ditto	Dd. James.
181	Tunnel	Ditto	Jones, Evans, & Co.
182	Tranch	Ditto	Rees & James.
183	Ty Mawr	Ditto	Rees & Jones.
184	Tonymoch	Ditto	J. L. Evans & Co.
185	Tyr Adam	Ditto	Latch & Co.
186	Tillery Pit	Ditto	Jayne & Co., Limited.
187	Tillery Level	Ditto	Ditto.
188	Tillery	Ditto	Clapp & Williams.
189	Tir Filkins	Ditto	Powell, Brothers.
190	Tir Filkins (New)	Ditto	Ditto.
	Tredegar :		
191	Ty Trist, No. 1	Ditto	Tredegar Iron Co.
192	Ty Trist, No. 2	Ditto	Ditto.
193	Ty Trist No. 3	Ditto	Ditto.
194	Bedwellty	Ditto	Ditto.
195	Ash Tree	Ditto	Ditto.
196	Forge Drift	Ditto	Ditto.
197	Darran	Ditto	Ditto.
198	Yard	Ditto	Ditto.
199	Gomer's Level	Ditto	Ditto.
200	Bedwellty Level	Ditto	Ditto.
201	Tavarnau bach	Ditto	Ditto.
202	Patches	Ditto	Ditto.
203	No. 1 Colliery	Ditto	Ditto.
204	No. 2 „	Ditto	Ditto.
205	No. 3 „	Ditto	Ditto.
206	No. 4 „	Ditto	Ditto.
207	No. 5 „	Ditto	Ditto.
208	No. 6 „	Ditto	Ditto.
209	No. 7 „	Ditto	Ditto.

LIST under the COAL MINES REGULATION ACT—*continued.*

No.	Name of Mine.	Where situated.	Owner's Name.
	Tredegar—*cont.*		
210	No. 8 Colliery	Monmouthshire	Tredegar Iron Co.
211	No. 9 „	Ditto	Ditto.
212	No. 11 „	Ditto	Ditto.
213	New Pits	Ditto	Ditto.
214	Varteg Hill Colliery	Ditto	J. Vipond & Co., Limited.
215	Varteg Hill Mine	Ditto	Ditto.
216	Varteg Hill Slope	Ditto	Ditto.
	Varteg Works:—		
217	Cwmfrwd	Ditto	Partridge, Jones, & Co.
218	Plascoed	Ditto	Ditto.
219	Cwmserchan	Ditto	Ditto.
220	Varteg Coal	Ditto	Ditto.
221	Varteg Mine	Ditto	Ditto.
	Victoria:		
222	No. 1 Colliery	Ditto	Ebbw Vale Iron Co.
223	No. 2 „	Ditto	Ditto.
224	No. 3 „	Ditto	Ditto.
225	No. 5 „	Ditto	Ditto.
226	No. 6 „	Ditto	Ditto.
227	No. 14 „	Ditto	Ditto.
228	No. 15 „	Ditto	Ditto.
229	Waterloo	Ditto	J. Phelps & Co.
230	Waterloo	Ditto	Thos. Davis & Co.
231	White Rose	Ditto	Powells Duffryn Co.
232	Gellygroes	Ditto	D. Williams & Co.
233	Drissiog	Ditto	Lewis, Brothers.
	Beaufort:—		
234	Pantyforest	Breconshire	Nantyglo and Blaina Co.
235	Bwlch-y-garn	Ditto	Ditto.
236	Cinder Pit	Ditto	Ditto.
237	Pitty Levels	Ditto	Ditto.
238	Viaduct Levels	Ditto	Ditto.
239	Tunnel Pit	Ditto	Ditto.
240	Black Pin	Ditto	Ditto.
241	No. 3 Colliery	Ditto	Ditto.
242	No. 5 „	Ditto	Ditto.
243	No. 10 „	Ditto	Ditto.
244	Hendre	Ditto	James Phillips & Co.
245	Hafod	Ditto	Hafod Coal Co.
246	Hafod Ellwood	Ditto	Ditto.
247	Aber	Glamorganshire	Wood & Co.
248	Brains Level	Ditto	James & Williams.
249	Brithdir	Ditto	Dowlais Iron Co.
250	Carngethin	Ditto	E. D. Williams.
251	Church	Ditto	Messrs. Beddoes.
252	Cross Keys, Hangoed	Ditto	Thos. Thomas.
253	Cil haul	Ditto	Bargoed Coal Co.
254	Derri Newydd	Ditto	Peacock, Walker, & Co.
255	Energlyn	Ditto	Energlyn Coal Co.
256	Gilvach Vargoed	Ditto	Wm. Batters.
257	Gwladis	Ditto	Bevan and Pryce.
258	Garth Rudry	Ditto	Nicholas and Johnson.
259	Hengoed	Ditto	Thomas and Lewis.
260	Hendredenny	Ditto	Llantwit Basin Coal Co.
261	Llantwit and Black Vein	Ditto	Llantwit and Black Vein Co.
262	Llantwit Basin	Ditto	Llantwit Basin Coal Co.
263	Mardy	Ditto	Christopher James.
264	New Rhôs	Ditto	E. D. Williams & Co
265	Old Brithdir	Ditto	P. J. Woodruffe.
266	Penrhiwfelin	Ditto	Davis & Son.
267	Rhôs Llantwit	Ditto	Rhôs Llantwit Co.
	Rhymney:		
268	Twyn Carno, No. 1	Ditto	Rhymney Iron Co.
269	Ditto No. 2	Ditto	Ditto.
270	Terrace	Ditto	Ditto.
271	New Duffryn	Ditto	Ditto.
272	The Duffryn	Ditto	Ditto.
273	Pidwallt	Ditto	Ditto.
274	Nant Llesg	Ditto	Ditto.
275	Tir Phil	Ditto	Ditto.
276	Cefn Brithdir	Ditto	Ditto.
277	Darran	Ditto	Ditto.

List under the Coal Mines Regulation Act—*continued.*

No.	Name of Mine.	Where situated.	Owner's Name.
278	George Inn	Glamorganshire	Rhymney Iron Co.
279	Tyr Gibbwn	Ditto	Energlyn Coal Co.
280	Troedyrhiwfuch	Ditto	Dd. Joseph.
281	Twynycoedcae Rudry	Ditto	Marland and Davis.
282	Wingfield	Ditto	Bevan and Pryce.
283	Addis Hill	Forest of Dean	H. Crawshay and Sons.
284	Bilson	Ditto	Bilston and Crumpmeadow Coal Co.
285	Blakeney	Ditto	Blakeney and Forest of Dean Coal Co.
286	Bridewell	Ditto	W. Pritchard.
287	Bromley Hill	Ditto	Ebbw Vale Iron Co.
288	Brookhall Ditches	Ditto	Parkend Coal Co.
289	Buckholt	Ditto	Trotter, Thomas, & Co.
290	Bailey Hill	Ditto	Rees J. Harry.
291	Crumpmeadow	Ditto	Bilston and Crumpmeadow Co., Limited.
292	Cross Knave	Ditto	Benjamin Davis.
293	Certainty	Ditto	Princess Royal Coal Co.
294	Duck Pit	Ditto	Goold.
295	Dark Hill	Ditto	Fryer, Langham, & Co.
296	Dry Brook	Ditto	Ebbw Vale Iron Co.
297	Edenwall	Ditto	Shad. Hughes.
298	East Slade	Ditto	New Bowson Co.
299	Foxes Bridge	Ditto	Foxes Bridge Coal Co.
300	Farmer's Folly	Ditto	J. Railton & Co.
301	Farmy Lay	Ditto	Shad. Hughes.
302	Findall	Ditto	Forest of Dean Iron Co.
303	Flour Mill	Ditto	A. J. Price.
304	Futterill	Ditto	Western Counties Coal Co.
305	Great Western	Ditto	Great Western Coal Co.
306	Haywood	Ditto	Littledean Woodside Coal Co.
307	Hopewell Engine	Ditto	Western Counties Coal Co.
308	Howbeach	Ditto	Blakeney and Forest of Dean Co.
309	Howlerslade	Ditto	Trotter, Thomas, & Co.
310	Hawkwell	Ditto	J. Chivers and Son.
311	Hawkins' Coleford	Ditto	J. Hawkins.
312	Inkerman	Ditto	Geo. Russell.
313	Kidnall's Dipple	Ditto	J. Morell's Exors.
314	Knockley Tump	Ditto	Sam. Jenkins.
315	Lydbrook	Ditto	Theo. Criswick.
316	Lightmoor	Ditto	Crawshay and Sons.
317	Miles' Level	Ditto	Western Counties Co.
318	Morse's Level	Ditto	Simeon Holmes.
319	Norchard Level	Ditto	Lydney & Wigpool Iron Co.
320	New Found Gale	Ditto	Shad. Hughes.
321	Norchard Dipple	Ditto	J. Morell's Exors.
322	New Mount Pleasant	Ditto	Spicer and Buckland.
323	New Fancy	Ditto	Parkend Coal Co.
324	Oaken Level and White Lee	Ditto	T. Allaway.
325	Old Leather Pit	Ditto	A. J. Russell.
326	Old Furnace	Ditto	Trotter, Thomas, & Co.
327	Old Croft	Ditto	Hough and Atkinson.
328	Parkend	Ditto	Parkend Coal Co.
329	Paragon	Ditto	P. Constance.
330	Phipps' Pillowell	Ditto	Phipps and Price.
331	Pillowell	Ditto	Lückes and Nash.
332	Pluckpenny	Ditto	J. A Brain.
333	Princess Royal	Ditto	Princess Royal Co.
334	Parkhill	Ditto	Parkend Iron Co.
335	Quidchurch	Ditto	Quidchurch Coal Co.
336	Resolution and Safeguard	Ditto	Crawshay and Sons.
337	St. Vincent	Ditto	Wanklyn and Grindall.
338	Speculation	Ditto	Wye Colliery Co.
339	Setting Sun	Ditto	J. Griffiths.
340	Standfast	Ditto	Parkend Coal Co.
341	Speedwell	Ditto	Geo. Russell.
342	Stapledge	Ditto	J. Didler.
343	Trafalgar	Ditto	J. B. and W. B. Brain.
344	Thatch Pit	Ditto	Mrs. Loxley.
345	Tufts Level	Ditto	J. Morell's Exors.
346	Villetts Level	Ditto	Trotter, Thomas, & Co.
347	Wimberry	Ditto	Ditto.

LIST under the COAL MINES REGULATION ACT—*continued.*

No.	Name of Mine.	Where situated.	Owner's Name.
348	Worrell Hill	Forest of Dean	H. Harris and Son.
349	Bull Hall	Gloucestershire	Jefferies & Co.
350	Coal Pit Heath	Ditto	Sir Greville Smith, Bart.
351	Crown	Ditto	E. L. Owen.
352	Easton	Ditto	Leonard, Boult, and Co.
353	Fishponds	Ditto	Mr. Flower.
354	Golden Valley	Ditto	Aaron Brain and Co.
355	Hanham	Ditto	Geo. Hard Leonard.
356	Hole Lane	Ditto	Jefferies and Co.
357	Kingswood	Ditto	Kingswood Iron & Coal Co.
358	Mangotsfield	Ditto	Brown and Butler.
359	Mangotsfield Common	Ditto	S. Phipps.
360	New Cheltenham	Ditto	Chubb and Waring.
361	Oxenhall	Ditto	Wm. Astin.
362	Parkfield	Ditto	Wethered and Cossham.
363	Pennywell Road	Ditto	G. W. Harris.
364	Rangeworthy	Ditto	E. L. Owen.
365	Speedwell	Ditto	Wethered and Cossham.
366	Whitehall	Ditto	Leonard, Boult, & Co.
367	Yate	Ditto	Long, Nowell, & Co.
368	Ashton Vale	Somersetshire	Ashton Vale Iron Co.
369	Buckland Dinham	Ditto	Jas. Oxley.
370	Bishop Sutton	Ditto	Hollwey & Co.
371	Braysdown	Ditto	Wait, Savage, & Co.
372	Clandown	Ditto	Chas. Hollwey.
373	Conegre, Upper	Ditto	Samborne, Smith, & Co.
374	Conegre, Lower	Ditto	Ditto.
375	Camerton, Old	Ditto	Miss Jarrett.
376	Camerton, New	Ditto	Ditto.
377	Dean Lane	Ditto	H. Bennett.
378	Downside	Ditto	W. Evans & Co.
379	Edford	Ditto	Fussell, Walters, Brice, & Co.
380	Foxcote	Ditto	Wait, Savage, Hill, & Co.
381	Farringdon	Ditto	Hollwey & Co.
382	Frysbottom	Ditto	Perry & Co.
383	Grayfield	Ditto	Ditto.
384	Huish	Ditto	Wait, Savage, & Co.
385	Mells	Ditto	Naish and Steeds.
386	Moorwood	Ditto	Westbury Iron Co.
387	Malago Vale	Ditto	Malago Vale Coal Co.
388	Nailsea Heath	Ditto	Chance, Brothers.
389	Newbury	Ditto	Westbury Iron Co.
390	New Rock	Ditto	Plummer and Son.
391	Old Welton	Ditto	Mogg & Co.
392	Old Grove	Ditto	Samborne, Smith, & Co.
393	Old Mills	Ditto	W. Evans & Co.
	Radstock :—		
394	Tyning	Ditto	Countess Waldegrave.
395	Wellsway	Ditto	Ditto.
396	Ludlow	Ditto	Ditto.
397	Middle Pit	Ditto	Ditto.
398	South Liberty	Ditto	Ashton Vale Iron Co.
399	Twerton	Ditto	Bath Colliery Co.
400	Vobster, Old	Ditto	Steeds & Co.
401	Vobster, New	Ditto	Ditto.
402	West End	Ditto	Nailsea Coal and Coke Co.
403	White Oak, Nailsea	Ditto	White Oak Colliery Co.
404	Withy Mill	Ditto	Samborne, Smith, & Co.
405	Welton Hill	Ditto	C. Hollwey.
406	Writhlington, Upper	Ditto	Smith, Hill, & Co.
407	Writhlington, Lower	Ditto	Ditto.
408	Bideford Culm	Devonshire	Bideford Black Paint Co.

Composition of the South-west Board for Examinations

Abraham Darby, Esquire, Treberffed, Breconshire.
William Benjn. Naish, Esquire, Ston Easton, Somersetshire.
Edwin Crawshay, Esquire, Abbotts Wood, Forest of Dean.
William Needham, Esquire, Newport, Monmouthshire.
Charles Anderson Harrison, Esquire, Vobster, Somersetshire.
John Trotter Thomas, Esquire, Coleford, Gloucestershire.
Mr. William Burchall, Beaufort, Monmouthshire.
Mr. John Jones, Ebbw Vale, Monmouthshire.
Mr. David Williams, Rhymney, Monmouthshire.

Examiners.

William Needham, Esquire.
C. A. Harrison, Esquire.
J. T. Thomas, Esquire.

Secretary.

J. T. Thomas, Esquire, Winnals Hill, Coleford.

Inspector.

Lionel Brough, Clifton.

Mr. Brough's Report.

Report on the Working of the Metalliferous Mines Regulation Act of 1872 (35 & 36 Vict. c. 77.) in the South-west District, during the year ended the 31st of December 1875.—By Lionel Brough, Esq., F.G.S.

Sir, Clifton, 30th March 1876.

I have the honour to report on the Metalliferous Mines Act of Parliament operations in the district under my charge. The statement will, however, necessarily be a double one, inasmuch as that it spreads over two years. In 1874, the nominated day for "Returns" still remained fixed for the 1st of August, but they did not all of them reach my hands until far into September, and thus it was that no annual Report was framed for that year. But, in 1875, the 1st of February became the legalized day, so that I am now able to give in all details; still, the records will be greatly simplified by separating the two annual periods of time, therefore I will commence with 1874.

The minerals wrought were, of hæmatite, 149,114 tons; of oolite or Bath freestone, 95,219 tons; of lead, 403 tons; total produce of the district, 244,736 tons.

The number of employed, both underground and on the surface, amounted to 2055 persons.

Fatal accidents, only four; consequently there were 61,184 tons of saleable stuff brought to bank for one life lost; and one man killed for every 514 workpeople employed in the district.

I may also record that in 1874 11 non-fatal accidents occurred, attended with injury to 12 persons.

The year shows a decline, when compared with 1873, both in quantity of minerals gotten and in numbers of workpeople employed. The falling-off is in hæmatite, on account of there being no present prospect of revival in the iron trade in this south-western portion of the Kingdom.

In the year under notice, 77 mines were partially at work, but in many of that number but very small quantities were excavated, being merely kept in repair in the hope of the advent of better times.

Report on 1875.

In this year the total quantity worked was but 201,310 tons, statute weight; whereof 124,047 were hæmatite, 76,667 were Bath freestone, and 546 were so many tons of lead; 50 tons of sulphate of barytes were also worked. The people occupied in getting these minerals were fewer than in 1874, being only 1860 in number all told.

The fatal accidents amounted to seven. There were also seven non-fatal casualties in the year, which injured nine persons.

The proportional calculation is low indeed in 1875, being equal to but 28,759 tons of mineral got out of the ground for one single death; and, for each group numbering 266 of the people, one life was lost.

It will be seen by the list that 79 mines were open in the year now reported on. Very few of them, however, were extensively worked, because of the depression in that once great British staple, the manufacture of iron.

With this Report I remit the fatal and non-fatal accident list for 1874, and a similar document for 1875; likewise, a complete schedule of the mines of the district at the close of the latter year.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Whitehall, London.

I have, &c.
Lionel Brough.

List of Hæmatite Mines in the South-western District.—Inspector, Lionel Brough.

No.	Name of Mine.	Where situated.	Owner's Name.
1	Bromley	Forest of Dean	Ebbw Vale Iron Co.
2	Buckshaft	Ditto	H. Crawshay and Sons.
3	British	Ditto	Ditto.
4	China Engine	Ditto	Forest of Dean Iron Co.
5	Crow's Nest	Ditto	Staunton Iron Co.
6	Clearwell	Ditto	B. Stephens.
7	Coleford	Ditto	Lückes and Nash.
8	Drybrook	Ditto	Drybrook Iron Co.
9	Dean's Meend	Ditto	Dowlais Iron Co.
10	Easter	Ditto	Easter Iron Ore Co.
11	Frog	Ditto	William James.
12	Forget-me-not	Ditto	George Beach.
13	Highmeadow	Ditto	Lückes and Nash.
14	Injunction Belt	Ditto	Lydney and Wigpool Iron Co.
15	Lydney Park	Ditto	Ditto.
16	Lambsquay	Ditto	William Talbot.
17	Moxon Park	Ditto	William James.
18	New China	Ditto	Forest of Dean Iron Co.
19	New Dun Co.	Ditto	Ditto.
20	Old Bow Pit	Ditto	George Atkinson.
21	Old Ham Pit	Ditto	William Talbot.
22	Oakwood Mill	Ditto	William James.
23	Do. Lower	Ditto	Ditto.
24	Old Park	Ditto	Robert Cuthbertson.
25	Perseverance and Findall	Ditto	Forest of Dean Iron Co.
26	Parkhill	Ditto	Greenham and James.
27	Robin Hood	Ditto	Lückes and Nash.
28	Staunton	Ditto	Wood and Phillips.
29	Sandstone	Ditto	Ditto.
30	Slope Pit	Ditto	Robert Cuthbertson.
31	Scar Pit	Ditto	William James.
32	Sling	Ditto	William Talbot.
33	St. Annals	Ditto	H. Crawshay and Sons.
34	Single	Ditto	Messrs. Goold.
35	Tufton	Ditto	George Atkinson.
36	Turpin	Ditto	Easter Iron Ore Co.
37	Thraves	Ditto	Hewlett and Shingles.
38	Wigpool	Ditto	Lydney and Wigpool Iron Ore Co.
39	Westbury Brook	Ditto	Dowlais Iron Co.
40	Yew Tree	Ditto	John Shingles.
41	Doward	Herefordshire	James Ridler.
42	Rudry	Glamorganshire	Rudry Iron Ore Co.
43	Barrow	Barrow Gurney	J. H. Blagrove.
44	Crescent	Clifton	Cooke Brothers.
45	East Harptree	Mendip Hills	Countess Waldegrave.
46	Frampton Cotteral	Bristol	Brogden and Sons.
47	Hoxenwall	Near Newent	J. B. Brown and Co.
48	Midsummer Norton	Midsummer Norton	Charles Hollwey.
49	Mells	Near Frome	W. B. Naish.
50	Pensford	Near Bristol	E. L. Owen.
51	Somerset Mines	Mendip Hills	Somerset Iron Co.
52	Temple Cloud	Near Bristol	H. J. E. Hippisley.
53	Winford	Ditto	Firmstone and Co.
54	Waldegrave	Mendip Hills	Waldegrave Co.
55	Yatton	Near Bristol	Yatton Iron Co.

List of Lead Mines in the South-western District.—Inspector, Lionel Brough.

No.	Name of Mine.	Where situated.	Owner's Name.
1	East Harptree	Mendip Hills	East Harptree Lead Co.
2	Waldegrave	Ditto	Waldegrave Co.

LIST of OOLITE MINES in the SOUTH-WESTERN DISTRICT.—Inspector, LIONEL BROUGH.

No.	Name of Mine.	Where situated.	Owner's Name.
		WILTSHIRE.	
1	Cliff Quarry	Box	Picton Brothers.
2	Lower Hill	Ditto	Messrs. Nobles.
3	Lower Hill Level	Ditto	Messrs. Sumsions.
4	Hayters Level	Ditto	Stone and Sons.
5	Quarry Level	Ditto	Messrs. Strong.
6	Shaft	Ditto	Messrs. Stone.
7	Slope	Ditto	Randall and Saunders.
8	Slope Level	Corsham	Ditto.
9	Level Slope	Ditto	Pictor Brothers.
10	Thirty Yard Shaft	Farleigh Down	Stone Brothers.
11	Level Heading	Ditto	Messrs. Pictor.
12	Ditto	Ditto	Messrs. Sumsions.
13	Ditto	Ditto	Messrs. Rogers.
14	Ditto	Kingsdown	Gardner and Marsh.
15	Ditto	Bradford	——
16	Ditto	Ditto	Rogers and Bethell.
17	Vertical Shaft	Corsham	Randall and Saunders.
		SOMERSETSHIRE.	
18	Level Heading	Freshford	——
19	Ditto	Ditto	Messrs. Wallington.
20	Ditto	Ditto	Stone Brothers.
21	Quarry Heading	Combe Down	Ditto.
22	Greendown	Ditto	Ditto.

LIST of the FATAL METALLIFEROUS MINE ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH-WESTERN DISTRICT, comprising part of GLAMORGANSHIRE, portion of BRECNOCKSHIRE, all MONMOUTHSHIRE, all GLOUCESTERSHIRE, all HEREFORDSHIRE, all WILTSHIRE, and part of SOMERSETSHIRE, during the year ending 31st December 1874.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives Lost.					
									Explosions of Powder.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1874.														
April 24	1	Edge Hill -	Forest of Dean -	Dowlais Company -	Clement Barnard -	Miner -	16	Fall of stone - - -	–	1	–	–	–	1
May 12	2	Frampton Cotterell.	Gloucestershire -	Brogden & Son - -	John Jenkins -	Do. -	30	Do. - - -	–	1	–	–	–	1
July 11	3	Edge Hill -	Forest of Dean -	Dowlais Company -	Timothy Barnard -	Do. -	44	Do. - - -	–	1	–	–	–	1
Sept. 15	4	Do. -	Do. -	Do. - -	Henry Muir -	Do. -	21	Fell out of cage - - -	–	–	1	–	–	1
								Total killed - -	–	3	1	–	–	4

NON-FATAL ACCIDENTS.

1 was occasioned by fall of stone	whereby	1 person was hurt.
4 took place in shafts	„	5 persons suffered more or less injury.
5 were due to miscellaneous causes	„	5 do. do. do.
1 occurred on the surface	„	1 person was badly bruised.
11 separate accidents,	whereby	12 men and boys sustained injury.

LIONEL BROUGH,

Inspector of the Metalliferous Mines of the District.

LIST of the FATAL METALLIFEROUS MINE ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH-WESTERN DISTRICT, comprising all the Counties set forth in the Fatal and Non-fatal Accident List of 1874, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives Lost.					
									Explosions of Powder, &c.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875.														
Jan. 23	1	Princess Louise	Forest of Dean	Ebbw Vale Co.	Wm. Hore	Sinker	23	Explosion of dynamite	1	–	–	–	–	1
Mar. 3	2	Edge Hill	Do.	Dowlais Company	Hy. Blewitt	Miner	13	Smothered by "fine ore" in a "trill"	–	1	–	–	–	1
„ 13	3	Hudderswell	Corsham	Randall, Saunders, & Co.	Thos. Wheeler	Mason	36	Fell down shaft	–	–	1	–	–	1
„ 25	4	Edge Hill	Forest of Dean	Dowlais Company	R. Roberts	Miner	14	Fall of stone	–	1	–	–	–	1
May 27	5	Ridge	Corsham	Randall, Saunders, & Co.	A. Gale	Labourer	19	Crush of trolley on surface	–	–	–	–	1	1
Sept. 10	6	Coombe Down	Bath	Do. do.	Joseph Hillier	Winder	70	Killed by crane handle	–	–	–	–	1	1
Dec. 3	7	Highmeadow	Forest of Dean	H. Crawshay & Sons	Wm. Watkins	Miner	14	Fall of ground	–	1	–	–	–	1
								Total killed	1	3	1	–	2	7

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NON-FATAL ACCIDENTS.

1 accident, whereby	1 person was hurt	by fall of stone underground.
2 accidents	„ 2 persons were hurt	in shafts.
2 do.	„ 4 do.	do. by explosion of gunpowder whilst blasting.
2 do.	„ 2 do.	do. by crush of trams and tubs.

7 accidents, whereby 9 persons were more or less injured.

LIONEL BROUGH,
Inspector of the Metalliferous Mines of the District.

COUNTIES and PARTS of COUNTIES comprising the SOUTH-WESTERN DISTRICT.

Mineral wrought under the Coal Mines Regulation Act in—

Monmouthshire,
Gloucestershire,
Somersetshire,
Devonshire, and
Parts of Glamorganshire and Breconshire.

Mineral wrought under the Metalliferous Mines Regulation Act, in—

Herefordshire,
Gloucestershire,
Somersetshire,
Wiltshire, and
Part of Glamorganshire.

Mr. Baker's Report.

Report on the Inspection of Mines in the South Staffordshire and Worcestershire District, for the Year ended the 31st of December 1875.—By James Philip Baker, Esq.

Sir, Tettenhall Wood, Wolverhampton, 31st March, 1876.

The Report which I have the honour to transmit for your consideration for the year 1875, does not compare favourably with the year immediately preceding.

In 1874 the number of lives lost in coal mining only reached 50 in this inspection division, whilst for the year 1875 I have to record 75, showing an increase of 50 per cent.

Increase in the death rate, and how brought about.

So large an increase over the preceding year seems at first sight startling; but the fact is that it is not that 1875 was a year of excessive accidents, but that in 1874 they were exceptionally few, arising from the fact that there was a 16 weeks' strike in that year, whilst during the whole of last year the mines were steadily at work, and the produce was exceptionally large. Leaving out the year 1874, the fatal accidents last year were not excessive in comparison with previous years. As previously stated, the average deaths for the 10 years 1851 to 1860, were 162; for the next 10 years 1861 to 1870, they averaged 107; and for the three years 1871 to 1873 they fell to 88. The death rate of last year therefore, though much in excess of the year of the great strike, was below the greatly reduced average of the previous three years.

The increase of 25 deaths is made up in the following manner, namely:—4 from explosions of fire-damp, 20 by falls, and 1 on the surface, thus showing that the augmented mortality in the coal mines of this district is chiefly due to falls in the mine; but this increase leaves the deaths from this cause far below the number given in earlier reports; indeed, the state of things now, looking at what it was 10 or 15 years ago, strongly invites a further comparison; but as this has often been presented in my former reports, further reference to the decreased loss of life is scarcely necessary.

Whilst I have to record an unfortunate increase in the loss of life in working the mines coming within the scope of the Mines Regulation Act, I have also to report a greatly increased output of coal and ironstone.

The amount of addition to the coal raised in the year, compared with 1874, was 1,800,000 tons, and of ironstone 137,881 tons, whilst the get of fireclay has slightly diminished. In the working of the last I am pleased to be able to say no fatal accident happened.

The confidential returns of the trade, together with the allowance for excess of about 16 per cent. over and above the statute ton of 2,240 lbs., waste and colliers' allowance coal and colliery consumption—enable me to record the get of coal for 1875 as 10,300,000 tons in this district.

Large number of deaths due to the unfortunate persons themselves.

Of the 75 persons who were killed or who died of the injuries received in working the coal mines—and the 9 in the ironstone mines, making a total of 84—the deaths of 7 were causd by explosions of fire-damp, 39 by falls, 14 from accidents in shafts, 18 miscellaneous, and 6 on the surface, to some of which I shall in the course of this report again refer. Whilst some of the fatalities were brought about through violations of the law, to which it will be my duty to allude hereafter, it is only fair to state that upwards of 20 per cent. of the deaths are due to the disobedience or to careless indifference to the requirements of the mining regulations, or in some cases probably to the ignorance of the unfortunate persons themselves. This statement may seem to reflect on the conduct of the unfortunate men; nevertheless careful investigation fully justifies the proportion stated, which, if anything, is under rather than over rated.

Penalties.

With your sanction proceedings have been instituted against the persons named below, and penalties to the amounts standing opposite their respective names have been imposed, of which 22*l.* 10*s.* has been allowed to the relatives of the deceased and injured persons in the following cases, namely, a moiety of 10*l.* to the widow and children of the deceased, who lost his life in the Ramrod Hall Colliery explosion, ten pounds (10*l.*) to the injured

man in the case against Mr. William Dudley of the Mount Pleasant Colliery, and 2*l.* 10*s.* to the injured man in the case against Mr. George Taylor of the Prince of Wales Colliery.

List.

	Offences.	£	*s.*	*d.*
William Parton, manager, King's Hill Colliery -	1	2	0	0
Joseph Millward, owner, Victorian Colliery -	6	4	0	0
Thomas Williamson, manager, Norton Cannock Colliery	2	15	0	0
Joseph Davies, manager, Darlaston Green Colliery -	2	10	0	0
Henry Hickman, owner, Hay Green Colliery -	1	2	0	0
Benjamin Robinson, manager, Hay Green Colliery -	2	2	0	0
George Taylor, manager, Prince of Wales Colliery -	1	5	0	0
William Corbett, owner, Brettell Lane Colliery -	3	6	0	0
William Dudley, owner, Mount Pleasant Colliery -	2	22	10	0
William North, owner, Ramrod Hall Colliery -	2	20	0	0
Joseph Baker, charter master, Ramrod Hall Colliery	6	8	15	0
Thomas Woodall, overman, Ramrod Hall Colliery	1	2	0	0
Joseph Aston, owner, Burnt Tree Colliery - -	1	5	0	0
Samuel Haywood, engineman, Ettingshall Colliery -	1	2	0	0
John Garrington, miner, Black Lake Colliery -	1	2	0	0

In the case of Samuel Haywood an appeal has been heard at Quarter Sessions and the magistrates' conviction has been quashed. The case, however, will in due course be submitted to the court of Queen's Bench.

Explosions.

With regard to the six deaths from explosions of fire-damp, I consider it only necessary to notice three, which stand respectively 27, 53, and 67 in the list of deaths appended hereto.

The first happened at the Prince of Wales Colliery, resulting in the death of one man, and in slight injuries to 12 other workmen.

The immediate cause of this accident was not made quite clear.

My assistant, Mr. Scott, went down the pit the day after the explosion, and found the ventilation in good order, but that a hole in the Gubbin stone contained gas.

It was clear from the evidence at the inquest that gas was present in the stone workings, which no one was allowed to enter with a naked light. Gas was observed shortly before the explosion, and the overman said the men were withdrawn while it was being cleared and the candles extinguished.

A "blow-george," which is used to blow out gas from places from which the current of air failed to drive it, was in the pit, and according to one witness it was at work when the explosion occurred. Though the candles had been put out at the spot where the gas fired, there were others burning 20 yards off in one, and 13 or 14 yards in another direction. My assistant found that the lamp of the deputy overman contained no shield, and that there was oil round the gauze, and with a strong current of air the gas might have fired at such a lamp, or it is possible that it fired at one of the candles some distance off. The jury returned a verdict of "accidental death," stating at the same time that no blame was attached to any person concerned in the workings.

Although some wise precautions were taken in this matter, which are strictly in accordance with the Act, in the withdrawal of the men, no man in his senses would ever have thought of using a "blow-george" (small fan) to drive gas out of an awkward and difficult place to ventilate into the air-way where the main air-current had to pass immediately into the lower face of work where naked lights were in use. The evidence, however, goes to show in this instance that the lights were put out, and nothing but the safety lamp in use. We are also told that one of the men was ordered to get his flannel jacket and begin to brush or buffet the gas out in the face of the lamp, the doing of which no doubt caused the flame to pass the gauze of the lamp and fire the gas, and hence the explosion.

Men of no better judgment should never be intrusted with the safety of others in a fiery mine. Such ignorance and inexperience not unfrequently bring about the worst of disasters; and of such, I regret to have to say, the class of the so-called competent persons in my district is to a very considerable extent composed.

The second took place at the Ramrod Hall Colliery.

On the morning of the fatal occurrence, one of the headways or drifts in course of being driven, was professedly examined by the overman, and if the death-bed statement of the deceased is to be relied on, it was pronounced safe. On the other hand, however, the over-

man states that he told deceased there was gas in his working place, and that he gave him a safety-lamp, and told him to go in and brush the gas out, which, upon the information of this man, was by no means an uncommon thing to do, whenever they found a small quantity of gas. This practice in bygone times has cost many a miner his life, and no man of moderate experience in mining matters, having regard for his own and the lives of others, would ever think of adopting such a course.

This improper mode of dealing with gas, however, was not, in this instance, the cause of the accident under notice, for it was found upon investigation that the working where the explosion occurred had been carried forward to a distance of 80 yards beyond the air current, consequently there was not an adequate amount of ventilation, as required by the first general rule of the Coal Mines Regulation Act.

This and another offence was brought under your notice, and the manager was subsequently summoned before the magistrates and fined 20*l.* and costs.

Further, the carelessness and indifference of the chartermasters and "competent" person employed at this pit as to the requirements of the law and the special rules thereunder, exhibited a state of things altogether at variance with the proper discipline of a well regulated colliery, and to this cause the accident is mainly due. Besides the violation of the general rules already alluded to, there were at the time of the explosion no less than seven separate offences by the subordinate officers of this pit, for which, after being submitted for your consideration, the offenders were summoned before the magistrates and convicted in the full penalties, which are set forth in the above list, in addition to which they had to pay the costs. Having thus fully reported on the state of affairs at this mine, I consider it fair to say that it is one of the best in my district, and one in which I least expected to find such lax discipline on the part of the officers underground. The mine has been under one of the most respectable and able mining engineers in my district for the last 15 years, and considering the extent of the workings and the quantity of mineral raised, has been one of the freest from fatal accident.

The third and last of these cases occurred at the Black Lake Colliery. This, like many others of its class, was brought about by disobedience to the overman's orders, and by sheer neglect of the special rules in force at the colliery. A man named "Garrington," after being duly cautioned, foolishly went into the gate-road towards his place of work with a naked light, returned to the loader and his assistant, whom he had left waiting near the pit-bottom, and told them "to go in to their work, it was all right." His order was immediately obeyed, and when they reached the far end of the headway (or gate-road) they fired the gas, and the injuries he received, after some days, resulted in the death of the loader, showing how some of the colliers lose their lives through the carelessness and ignorance of their fellow workmen. Proceedings for the respective violations of the law and special rules were on your authority taken against the man "Garrington," which, after a long hearing in the Wednesbury police court, resulted in the imposition of a fine of 2*l.*, and the costs.

Falls.

Of the 36 persons who lost their lives from this class of accidents during the year, not more than one individual was killed by any one accident, except in the case number 43 in the list. The two unfortunate men to whom the accident proved fatal were assisting to prop the roof when the fall occurred, which was no doubt brought about by sudden superincumbent pressure. Had the propping been attended to sooner, in all probability the fall would have been prevented, or sufficient warning given to have enabled the men to escape. Timbering too long deferred has been a fruitful cause of accidents, and it should therefore be considered as of paramount importance to see that all necessary propping of the mine is duly attended to at the commencement of each shift, and not be left, as in many instances, until through local disturbance more threatening symptoms appear, when the means adopted to obviate the danger often expose the workmen to serious and unnecessary risk.

Accident No. 10 was brought about in a similar manner. All the other fatalities under this head except one, No. 19, were of an accidental character, and require no explanation beyond what is given in the list itself.

With regard to No. 19 I have to state that no provision was made, at the place where the unfortunate man lost his life, to render the roof or sides secure in accordance with the 16th general rule. This appeared to be a clear violation of the Act, and at your instance proceedings were taken against the manager, which resulted in the imposition of a penalty of 2*l.* and costs.

Shafts.

Twelve persons were killed in various ways and from various causes in shafts, exactly corresponding with the number of deaths recorded under this head in 1874. Two persons

called cagers (or hookers on) lost their lives whilst employed at the pit or shaft bottom, and were either struck by the cage, through being too near when it was in motion, or accidentally fell into the cage hole, and the cage coming down upon them unawares crushed them to death before help arrived.

Three other persons, two men and one boy, fell out of the skip or cage whilst ascending or descending. They are said to have been subject to "fits." Persons with such liability should not be allowed to descend or ascend the pit alone, nor unless they are first attached in some way to the tackle, so that in case of syncope they may be kept from falling down the shaft. Indeed it would be far better if such persons secured employment above ground.

No. 34 was a sad case. The deceased pushed a loaded tub into the shaft at an upper inset in the 8 feet seam, fell about 28 yards, and was killed. This fatality might have been prevented if General Rule 14 of the Coal Mines Regulation Act had been duly complied with. This and another violation of the law were duly reported to you at the time, and after receiving your instructions to prosecute, the manager (Thomas Williamson) of the colliery was duly summoned before the Willenhall Bench, convicted in both cases, and fined 15*l.* and costs, in two fines of 10*l.* and 5*l.* respectively.

The next case requiring special remark is No. 51 in the list. This accident occurred at a trial sinking pit. As two sinkers, the deceased and another, were ascending during the night shift, on reaching the pit top deceased from some unknown cause jumped out of or off the "bowk," and failing to clear the mouth of the pit fell back down the shaft and was killed. This sad and reckless act is not the first case of the kind in this district. Many a collier and sinker has by this foolish practice lost his life.

No. 63 and the last in the list I consider it necessary to refer to, took place at the Aldridge Colliery sinking pit, by which two lives were sacrificed. On the day of this very unusual and unfortunate accident, and whilst two sinkers were descending the pit on change of shift, the "bow" of an ascending full bowk snapped, and, together with its contents, fell down the shaft and striking the two deceased men, killed them on the spot, several others at the bottom escaping in a remarkable manner. So fortunate an escape was doubtless due to the large size of the shaft. After the accident the point of fracture exhibited a flaw in the iron, the result of bad manufacture, or the making of the "bow" by unskilled hands afterwards.

Deplorable as the loss of life is in any of its varied forms in the working of the mines from any cause whatsoever, I consider this district fortunate in having so few in shafts, for in no other mining district in the United Kingdom, or indeed in the whole mining world, are there so many pit shafts and winding appliances of such varied character as are to be met with in South Staffordshire and Worcestershire.

Miscellaneous.

Fifteen of the 75 deaths come under this designation, amongst which the greatest fatality of all the year is classed, and which happened on the 4th January.

Four miners lost their lives by suffocation in the rib and pillar workings of the thick coal in the Old Buffery Colliery, which, like many other parts of the South Staffordshire coalfield, has been subject to spontaneous combustion (called gob-fire) more or less ever since thick coal mining began. At the pit where this lamentable occurrence took place no stalls or openings (sides of work) had been commenced. The operations were principally confined to exploring drifts, or, what is better known by the name of gate-roads. At the time of the accident considerable progress had been made in this kind of work. If the local and dangerous circumstances already alluded to had not hindered the operations, another means of escape would have been provided at this mine, making two outlets instead of one from the main shaft or entrance to the mine, by which the lives of the unfortunate men would in all probability have been saved. For several weeks before the accident happened fire had been discovered near the exploring drifts in the old workings of former years, which at length became so troublesome as to cause a temporary suspension of the exploring work. With a view to extinguish or get rid of a fire of this kind it is usual to construct air-tight dams, or remove the fire itself where it may be safely approached and practically cleared out.

It appears however that a dam was decided upon in this instance and the work of construction went on safely and well, and was so nearly completed that the charter master left the pit to change his clothes, leaving the overman (who perished in the accident) in charge of the work and the pit. Shortly after the charter master's departure one of the workmen climbed up to the top of the dam to ascertain the state of things beyond, when he discovered a quantity of fire, smoke, and steam. With a view, as he thought, to hasten if possible the extinction of the fire, he took a water pipe and directed a jet of water to act upon the burning mass. This brought about a disturbance of some kind (an explosion it was stated), but this could not be the case, as no flame was seen. It was doubtless a heavy fall of rock or

charred coal and rock in the old workings, which drove the hot ashes and fire before it into the gate-road in front of the archway, and thus closed all access to any part of the workings beyond the dam, where it was afterwards found the four unfortunate men, including the overman, had gone. The mass of fallen stuff was so great, and, together with the roof of the place, so difficult to deal with, that it took three hours to clear a roadway to get through on the other side of the archway, in search of the missing men. As soon as the state of the mine admitted of safe travel, several miners, including the manager and chartermaster, rushed along the gate-road in the hope of finding some at least of their comrades alive, this hope being strengthened by the fact of voices having been heard for some time after the accident. However, sad to relate, not one of the four men was found alive; they had all evidently succumbed to the deadly gases which escaped from the fire.

It was stated at the inquest upon the bodies that the roadway was fenced off, and that they had no business whatever to have gone into the part of the mine where they lost their lives, and for what purpose this was done by the overman who had so recently been left in charge, and especially after the strong injunction given by the manager to this man and the chartermaster to withdraw the workmen during these operations, will now for ever remain unknown.

Immediately after the bodies had been recovered, it was found absolutely necessary to dam up all approach to the place where the accident happened. Therefore, neither myself nor my assistant have been able to examine the spot, with a view, if possible, to ascertain the real cause of the fall of gob and fire. Many attempts were made to get into the workings again, but without avail, and the inquiry, which was opened in January after being several times adjourned and re-adjourned for this and other reasons, was finally closed in June, the jury returning a verdict of accidental death.

It appeared from the plan of the workings that one of the exploring drifts had passed so near an old shaft and partially through one of the old excavations in connection with it, that abundance of ventilation had constantly been produced without the aid of an independent air-way and the manager was taking advantage of this, till the additional communication, already spoken of at the commencement of my report on the case, should be completed. If, however, such an additional provision had been in existence in connection with the shaft near the fire, it is doubtful if any of the men would have made their escape.

A very similar accident to this happened in the year 1874 in one of Mr. Hackett's pits, near Rowley Regis, and although the circumstances connected with it were so widely circulated in this district, it was no warning to the persons concerned in the working of this mine, for in this, as in the case last under review, the application of water to the burning mass underground was doubtless one of the primary agents in bringing about these unusual and appalling fatalities. The place where the accident occurred at Mr. Hackett's Colliery was suddenly and unavoidably closed immediately after the accident, and this up to the present time has prevented any inspection being made.

No. 5 was a very sad case, especially when it is considered that the manager himself, who really ought to have known better, not only lost his own life, but led to the death of one of his overmen or subordinates.

Mr. Thomas Hope, manager, a Durham man, and John Troupe, overman, of the Netherend Collieries, the two men alluded to, were engaged in the mine, whilst a bricklayer and other persons were closing a permanent dam to prevent the escape of fire-stink (foul and poisonous gases) from the goaf and other places. This gas was produced by spontaneous combustion, and it appears to have prevailed most in the top workings of the thick coal, where Mr. Hope and his companion had gone quite unknown to the workmen closing the dam in the workings below.

One of these persons having found a jacket belonging to Mr. Hope or the overman, suspected something was wrong, and immediately went into the top workings, where he found them side by side, suffocated by the deadly gases which more or less were permeating the whole mine, and which had evidently for a time overpowered the ventilation in the main air-way where the bodies were found. How and for what purpose the manager and his overman came to push on their course in the face of such a deadly enemy will always remain a mystery. The only conclusion I am able to come to is, that both were ignorant of the effect of such poisonous gases, and went on determined to go through the workings, till at length the atmosphere became so thoroughly charged therewith, that they either sat down to rest and were gradually overcome, or that a sudden and unexpected rush of foul air overtook or met them, and so overpowered them that escape became impossible.

Colliery managers and workmen should always be careful in penetrating these gases, and should retire the instant they feel any ill effects therefrom.

A most unheard of case happened at the Essington Colliery, by which one person lost his life.

The deceased, an overman, was travelling from one pit to the other, and in order to avoid going the usual way, took advantage of a newly thirled headway. In this headway it appears some men were engaged cutting or blasting up the floor, and had charged a shot-hole and ignited the match in order to fire the shot, but before the match had time to burn down low enough to fire the straw or fuse, the unfortunate man reached the place, and whilst unconsciously passing over the ground in which the charge had been laid, the blast took place, killing the poor fellow instantaneously.

With a view to prevent such an accident, it was stated at the inquest that a person had been instructed to give warning before any shot was fired, and that this was done in the present instance; but the caution did not reach the ear of the deceased man.

No. 44 in the list was brought about by a tub, which was in motion at the time, coming into contact with one of the "timber" props, which it knocked out, and thus let the timber setting fall, and bringing down the roof, smothered the deceased. Many of these cases might, I believe, be prevented, if the props to the timber settings were fastened together by side lacing. This plan would prevent the props reeling, and would, generally speaking, resist the ordinary blows and disturbance to which they are, more or less, constantly subject. I have done everything in my power for years to persuade both men and managers of the desirablity of carrying out this plan; but I am sorry to have to say that it is not generally adopted.

The last accident under this heading, 57 in the list, which appears to me worthy of special notice, happened in an old thick coal pit where a large "fault" was being worked up to, and the face thereof stripped, which in this instance, owing to its great angle and magnitude, and, what was worst of all, the slippery face of the fault, allowed a large mass of rock to fall, which fastened the deceased upon the floor of the mine without injuring him. He however appears to have been so frightened that he died, the shock to the system having evidently been too great for the young man to bear, he being only 18 years of age.

Surface Accidents.

Three persons have been killed on the surface by machinery. Two of these lost their lives through being struck by the fly wheel of the winding engine, and one fell upon the cog wheels of a small pumping engine. The first case, No. 40 in the list, took place at the Ettingshall Colliery. On the day in question, the stoker was found in the fly wheel pit upon one of the arms of the fly wheel, but how he got there neither the engineman in charge nor anybody about the colliery knew or would acknowledge that he knew. The engineman asserted that he never saw him until he found him on the arm of the wheel and stopped his engine. However, there can be no doubt, if the truth were known, that the stoker, a youth, was standing on the fly wheel race oiling the machinery, when the engineman started his engine, which either shook him off, or the arm of the wheel struck him down when set in motion. Beyond this conjecture I am not prepared to go, and I think the fact of an oil can being found in the fly wheel pit, under where the boy was found, strengthens this view of the matter.

The special rules in force at this colliery prohibit the engineman allowing any person within his engine without authority from the owner, agent, manager, or colliery engineer, and finding that no authority had been given, the case was duly reported to you, and after receiving your instructions to institute proceedings, the engineman was summoned before the Sedgley Bench and fined in the full penalty of 2*l.* and costs. He, however, appealed at the Staffordshire Quarter Sessions of the Peace, and the court quashed the conviction, but granted a case for the opinion of the Court of Queen's Bench. Therefore this case is *sub judice*.

The other accident of this class (48 in the list) happened at one of the Old Buffery Colliery winding engines. The unfortunate young man who in this instance lost his life had charge of a winding engine on the surface, used for working the incline underground. The two engines are fixed close together, but erected in distinct houses. It appears that the deceased went into the adjoining engine, which at the time was not in motion, stooped down under the fence of the fly wheel, and stretching himself across the fly wheel pit and through the arms of the fly wheel, he tried to reach an iron bolt on the opposite side of the wheel, and whilst in the act the engineman, who was, as he himself states, looking through the window of his engine house at the time at the boilers, recklessly opened the valve of the steam pipe and set the engine in motion, killing the deceased on the spot. The engineman declares he neither saw nor heard him till after the accident. This case like the one before it is also involved in mystery. The unfortunate deceased had no business either in the engine house or at the spot where he was killed. Nor is the other engineman less blameable, for nothing could be more reckless and dangerous than his conduct in starting his engine without looking at the machinery. Such conduct is calculated to bring about, as it did in this instance, most

appalling accidents. The jury after a long investigation brought in a verdict, as in the former case, of accidental death.

The third and last of these machinery accidents took place at the Essington Farm Colliery. The deceased was employed to work a small pumping engine, and whilst oiling the small cog-wheels, he either slipped down upon the wheels, or was carelessly reaching over the fencing with the oil can in his hand, some part of his clothing became entangled in the wheels and dragged his body down upon them. There was nobody present, and this seems to be the only way of accounting for his untimely death.

This brings my remarks to a close so far as the coal mines are concerned. Although there were nine deaths in working the ironstone mines of this district during the year, I consider it necessary to mention one only. It was that of a boy of 13 years, who in the most daring manner removed the fencing from the entrance to one of the roadways, and rushed in where he was afterwards found suffocated by carbonic acid gas. The youth doubtless knew nothing of the deadly character of the atmosphere he so recklessly plunged into. But the discipline of the pit ought to have been such as to render conduct so dangerous almost impossible. Such an act as this, if fire-damp had been present instead of carbonic acid gas, might have involved the loss of many lives. All the other cases were of an accidental character and require no special remark. The fire-clay mines have been successfully worked throughout the year without any fatal accident, which is very satisfactory.

Metalliferous Mines.

There was only one death by accident in the limestone workings of this district during the year, the result of a blow by a fragment of rock from a shot. This was quite accidental; the deceased lingered a few days and then died of the injuries.

These and also the fire-clay mines have been lately brought under inspection in this district, and it is pleasing to find the working of both carried on with so little sacrifice of life.

I have the honour to be,
Sir,
Your very obedient Servant,
JAMES P. BAKER.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department,
London.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the SOUTH STAFFORDSHIRE AND WORCESTERSHIRE DISTRICT, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.	Total.
1875.														
Jan. 5	1	Buffery, Old	Dudley	John Jones & Sons	Benj. Mason	Deputy	36	Suffocated by gases from an underground fire, the result of spontaneous combustion. (*See* Report.)	–	–	–	4	–	4
					Jos. Harrison	Pikeman	45							
					Jos. Knowles	Driver	27							
					Thos. Green	Loader	18							
„ 16	2	Albert	Moxley	David Rose	Thos. Allen	Fireman	44	Premature explosion of shot. Supposed to have accidentally ignited the straw or fuze instead of the match.	–	–	–	1	–	1
„ 20	3	Gawn	Old Hill	Noah Hingey S	Jas. Cooksey	Loader	19	Injured by fall of coal on the 15th instant, the result of a "bump" in thick coal pit. Died this day.	–	1	–	–	–	1
„ 23	4	Leigh's Wood	Walsall	Leigh's Wood Colliery Company.	John Roberts	Sinker	41	Whilst the engineman was lowering deceased and three other sinkers the winding engine became uncontrollable, ran the men to the bottom of the shaft, and the rope striking the lining or loose brickwork forced a piece off, which fell down shaft and killed deceased on the spot.	–	–	1	–	–	1
„ 28	5	Netherend	Stourbridge	Jos. King & Co.	Thos. Hope	Manager	40	Suffocated whilst incautiously penetrating the workings when they were known to be charged with "fire-stink" (noxious gases), the result of spontaneous combustion.	–	–	–	2	–	2
					John Troup	Overman	45							
Feb. 1	6	Churchbridge	Oldbury	Churchbridge Colliery Company.	Absalom Jukes	Surface foreman.	36	Injured "thumb" on the 18th January. Died this day.	–	–	–	–	1	1
„ 2	7	Union	West Bromwich	Stour Valley Coal and Iron Company.	Thos. Higginson	Cager	58	Whilst lifting a piece of timber (a barr) out of a tub in which he was standing, he fell backwards and dislocated his neck.	–	–	–	1	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875. Feb. 10	8	Chillington -	Wolverhampton	Styler & Co. - -	Elias Hughes -	Pikeman -	20	Fall of coal in thin mine from off face of work whilst holing.	–	1	–	–	–	1
„ 10	9	Grace Mary -	Dudley - -	S. Minton & Co. - -	Jos. Hinstone -	Loader -	29	Fall of coal from a height of 22 feet in thick coal seam. Too high to be practicably supported by propping.	–	1	–	–	–	1
„ 16	10	Prince's End -	Tipton - -	Tibbington Colliery Co. -	Sam. Didlock -	Pikeman -	45	Fall of roof. Deceased was at the time of the fall setting timber props.	–	1	–	–	–	1
„ 16	11	Bullpiece -	Darlaston -	Darlaston Steel and Iron Company.	Stephen Cotton -	Bandsman -	36	Whilst deceased was putting on the sump planks a piece of timber fell down shaft from under the lander at pit top.	–	–	1	–	–	1
„ 27	12	Blakeley Hall -	West Bromwich	Blakeley Hall Colliery Co.	John Tustian -	Pumper -	47	Incautiously stepped out of man-hole when a tub was passing on an inclined plane.	–	–	–	1	–	1
Mar. 2	13	Old End -	Tipton - -	S. Groncott & Sons -	Jos. Smallman -	Timberer -	69	Fall of roof when in the act of setting timber. Injured on 27th ultimo. Died this day.	–	1	–	–	–	1
„ 6	14	Wolverhampton Rough Hills.	Wolverhampton	W. and E. Fenn - -	Jas. Greenfield -	Ditto -	28	Fell out of skip whilst descending. Deceased was subject to fits.	–	–	1	–	–	1
„ 10	15	Buffery, New -	Dudley - -	Wm. Gould - -	John Dudley -	Pikeman -	28	Fall of coal measures whilst holing, which deceased had neglected to "sprag."	–	1	–	–	–	1
„ 17	16	Crabtree -	Wednesbury -	Guy Brothers - -	James Pitt - -	Ditto -	40	Fall of coal in thick coal pit. A "bump" forced a mass off an unseen "slip."	–	1	–	–	–	1
„ 18	17	Victoria -	Tipton - -	Victoria Colliery Co. -	W. Shepherd -	Loader -	42	Fall of roof caused by deceased improperly removing the floor under the trees or props which supported it.	–	1	–	–	–	1
„ 20	18	Wallows -	Brierley Hill -	Earl of Dudley - -	Ben. Wilden -	Pikeman -	27	Fall of overhanging coal in thick coal pit, caused by deceased injudiciously drawing timber.	–	1	–	–	–	1

List of Fatal Colliery Accidents—*continued*.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875.														
Mar. 23	19	King's Hill	Wednesbury	Bayley & Hunt	J. J. Cooper	Loader	20	Fall of rock roof in new mine seam. No provision was made to secure the roof. (*See* Report.)	–	1	–	–	–	1
„ 25	20	Gospel Oak	Tipton	Grazebrook & Aston	Mark Plant	Driver	18	Crushed between horse and tub on shaft siding.	–	–	–	1	–	1
„ 31	21	White's Farm	West Bromwich	Ann Spittle	Rich. Dunn	Stoker	64	Deceased's clothes caught fire. He was carelessly standing too near the hot ashes under the fire-grate of the boiler.	–	–	–	–	1	1
Apr. 14	22	Saltwell's	Dudley	Earl of Dudley	John Taylor	Bandsman	20	Fall of coal off rib side caused by a "bump" in thick coal seam.	–	1	–	–	–	1
„ 14	23	Harden	Walsall	E. Crapper	Thos. Dainty	Pikeman	51	Injured by fall of coal (4 yard seam) on 9th instant. Died this day.	–	1	–	–	–	1
„ 18	24	West Cannock	Hednesford	West Cannock Colliery Company.	Sam. Davis	Driver	14	Injured whilst endeavouring to stop a train of three full tubs on 16th instant. Died this day.	–	–	–	1	–	1
„ 23	25	Ramrod Hall	Rowley Regis	Earl of Dudley	F. Bradley	Pikeman	40	Fall of coal off the face in thick coal pit.	–	1	–	–	–	1
„ 24	26	Herbert's Park	Bilston	D. Jones & Sons	Moses Pitt	Ditto	21	Whilst deceased was pulling down some loose coal a portion of the roof fell from a "slip" not previously seen. New mine coal pit.	–	1	–	–	–	1
„ 29	27	Prince of Wales	Dudley	Howe & Mason	Rd. Timmins	Ditto	54	Injured by explosion of firedamp on the 21st instant. Died this day.	1	–	–	–	–	1
„ 29	28	Essington Wood	Bloxwich	Darlaston Steel and Iron Company.	E. Hayward	Overman	48	Deceased was passing through one of the headways when a shot was exploded, of the whereabouts of which he was ignorant.	–	–	–	1	–	1
May 3	29	Wednesbury Old Park.	Wednesbury	Patent Shaft and Axle Company.	Jas. Jones	Labourer	66	Injured by capstan handle on the 28th ultimo. Died this day.	–	–	–	–	1	1
„ 6	30	James Bridge	Walsall	J. Bagnall & Sons	P. Leary	Timberer	22	Fall of roof in thin mine whilst removing timber settings in gate-road.	–	1	–	–	–	1

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875. May 14	31	East Cannock	Hednesford	East Cannock Colliery Company.	Jas. Simister	Roadman	43	Injured by a fall of "bat" from roof which rolled against his leg. Injured on the 8th instant. Died this day.	–	1	–	–	–	1
„ 14	32	Fishley	Walsall	Fishley Colliery Company	Geo. Tomlinson	Driver	14	Fall of clod from roof which fractured his leg on the 21st ultimo. Died this day.	–	1	–	–	–	1
„ 20	33	Tipton Moat	Tipton	Tipton Green Colliery Company.	Jas. Evans	Cager	17	Found dead under cage at pit bottom. Improperly standing in or too near cage hole, or accidentally fell under cage.	–	–	1	–	–	1
June 3	34	Norton Cannock	Walsall	Norton Cannock Colliery Company.	Wm. Bouser	Pikeman	28	Pushed tub into shaft and followed it. The inset was not fenced.	–	–	1	–	–	1
„ 6	35	Conduit	Brownhills	Conduit Colliery Company.	J. Seedhouse	Loader	18	Whilst loading in "face of work" in deep coal a fall of overhanging clod occurred. Injured on the 4th instant. Died this day.	–	1	–	–	–	1
„ 17	36	Chillington	Wolverhampton	C. Thomas & Co.	John Evans	Pikeman	54	Fall of coal from a face "slip" in new mine seam whilst holing. Injured on 12th instant. Died this day.	–	1	–	–	–	1
„ 22	37	Gospel Oak	Tipton	Grazebrook and Aston	Jos. Martin	Driver	17	Fall of roof in new mine seam from "slips" not previously seen.	–	1	–	–	–	1
„ 27	38	Swan	West Bromwich	Swan Colliery Company	Ben. Wilson	Pikeman	—	Whilst getting down the top-slipper in thick coal seam a mass fell from an unseen parting. Injured on 26th instant. Died this day.	–	1	–	–	–	1
July 7	39	Parkhead	Dudley	S. Garratt and Son	Ed. Painter	Cager	55	Found under cage on the 30th ultimo. Died this day. Deceased was either improperly standing in the shaft or accidentally fell under the cage.	–	–	1	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875.														
July 9	40	Ettingshall -	Bilston - -	Bannister & Co. - -	J. Share - -	Stoker -	16	Deceased was oiling, or standing on flywheel race for this purpose, when the engineman started the engine and killed him on the spot. (*See* Report.)	–	–	–	–	1	1
„ 14	41	Hilton - -	Bloxwich -	Hilton Colliery Company -	W. Smart -	Bandsman -	35	Fall of top coal in thin mine, which the deceased was engaged to cut. Injured on the 13th instant. Died this day.	–	1	–	–	–	1
„ 19	42	Granville -	Old Hill -	Swindell and Collis -	Job Price - -	Pikeman -	51	Crushed whilst holing by fall off the face on the 7th instant. Died this day.	–	1	–	–	–	1
Aug. 4	43	Himley -	Dudley - -	Earl of Dudley - -	Ben. Cowell -	Ditto -	24	Fall of heath coal from thick coal seam roof. The two unfortunate men were assisting to set timber props when the fall took place. The fall was doubtless caused by two slips in the roof, and was brought about by sudden superincumbent pressure.	–	2	–	–	–	2
					Thos. Bate - -	Bandsman -	20							
„ 20	44	Spring Vale -	Bilston - -	Bantock & Co. - -	W. Langstone -	Driver -	18	Deceased was taking out a tub from the work, which ran off the rails, and knocking out timber setting, smothered him upon the spot.	–	–	–	1	–	1
„ 24	45	New Cross -	Wednesfield -	B. Whitehouse and Sons -	Thos. Brant - -	Overman -	38	Injured by fall of new mine coal tops. Died same day.	–	1	–	–	–	1
„ 26	46	Saltwell's -	Dudley - -	Earl of Dudley - -	Elijah Provence -	Bandsman -	17	Fall of coal in thick coal, the result of a "bump."	–	1	–	–	–	1
„ 31	47	Grange - -	Oldbury -	H. Williams - -	T. Williams -	Manager -	57	Fell out of skip whilst descending on 30th instant. Died this day.	–	–	1	–	–	1
Sept. 4	48	Buffery, Old -	Dudley - -	J. Jones and Sons -	S. Body - -	Engineman -	18	Killed by flywheel of winding engine	–	–	–	–	1	1
„ 4	49	Tipton Moat -	Tipton - -	Tipton Moat Colliery Company.	H. Grimsell -	Driver -	18	Explosion of firedamp - -	1	–	–	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives Lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875.														
Sept. 15	50	Foxyards -	Tipton - -	Earl of Dudley - -	Benj. Smith -	Pikeman -	37	Whilst wedging off top coal in new mine seam a mass fell and killed him on the spot. Caused by a "bump."	–	1	–	–	–	1
„ 28	51	Wednesfield -	Wednesfield -	Geo. Phillips - -	W. George - -	Sinker -	—	Jumped out of the "bowk" whilst ascending at top of pit shaft.	–	–	1	–	–	1
Oct. 2	52	Cannock Chase	Walsall - -	Cannock Chase Colliery Company.	H. Webb - -	Driver -	15	Fall of roof in thin mine - -	–	1	–	–	–	1
„ 6	53	Ramrod Hall -	Rowley Regis -	Earl of Dudley - -	B. Aldridge -	Pikeman -	43	Explosion of firedamp. Injured on 5th instant. Died this day.	1	–	–	–	–	1
„ 6	54	Cakemore -	Oldbury -	Cakemore Colliery Company.	T. Bateman - -	Ditto -	26	Fall of coal in thick coal pit whilst holing. Caused by slips in gate-road. Injured on 5th instant. Died this day.	–	1	–	–	–	1
„ 7	55	Essington Farm	Bloxwich -	Essington Farm Colliery Company.	D. Murphy -	Engineman	19	Fell upon cogwheels of pumping machinery.	–	–	–	–	1	1
„ 11	56	Cannock Chase	Walsall - -	Cannock Chase Colliery Company.	W. Bayman -	Pikeman -	27	Explosion of firedamp on the 6th instant. Died this day.	1	–	–	–	–	1
„ 13	57	Buffery, Old -	Dudley -	J. Jones and Sons - -	A. Bradley - -	Loader -	18	A heavy fall of rock from smooth face of a great "fault" fastened deceased upon the floor, without injuring him. He, however, died through shock to the system.	–	–	–	1	–	1
„ 13	58	Tibbington -	Tipton - -	Tibbington Colliery Company.	C. Masters -	Ditto -	36	Deceased and another were repairing the roof when a fall of rock knocked the timber out.	–	1	–	–	–	1
„ 14	59	Wednesbury Oak	Ditto -	P. Williams and Sons -	W. Bradley -	Ditto -	38	Fall of coal in thick coal pit, caused by a "slip" not previously seen.	–	1	–	–	–	1
„ 16	—	Cannock Chase	Walsall - -	Cannock Chase Colliery Company.	N. Taylor - -	Pikeman -	30	Explosion of firedamp on the 6th instant. Died this day. Accident No. 56.	1	–	–	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives Lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875.														
Oct. 20	60	Stow Lawn -	Wolverhampton	J. Spruce & Co. - -	R. Preston -	Miner -	16	Fell out of skip whilst descending. He was subject to fits.	–	–	1	–	–	1
„ 27	61	Millfield -	Wednesbury -	Patent Shaft and Axle Company.	J. Curle - -	Sinker -	27	Whilst engaged doing repairs in pumping pit, the end of the gudgeon in pumping beam struck walling of the pit and broke the brickwork, a piece of which fell down shaft, struck deceased, and killed him on the spot.	–	–	1	–	–	1
Nov. 9	62	Aldridge -	Walsall - -	Aldridge Colliery Company.	Chares Jscoe -	Sinker -	30	Bow of sinking "bowk," which was ascending whilst the two deceased were descending, snapped, and the bowk and its contents fell upon them.	–	–	2	–	–	2
					Joseph Yates -	Ditto -	25							
„ 10	62	Saltwell's -	Dudley -	Earl of Dudley - -	H. Scriven -	Deputy -	22	Fall of a rate (loose coals) from a height of 18 feet off rib side whilst standing on a ladder trying to pull down the same. Thick coal pit.	–	1	–	–	–	1
„ 13	63	Woodside -	Ditto -	Cochrane & Co. - -	D. Batham -	Pikeman -	46	Fall of coal from an unseen "slip" in thick coal pit. Rib and pillar working.	–	1	–	–	–	1
„ 30	64	New Hawne -	Halesowen -	New British Iron Company	R. Hale - -	Ditto -	47	Trying to get down a portion of the "spires" in thick coal top workings, when another piece fell from a slip face and injured him so severely on 4th instant, that he died this day.	–	1	–	–	–	1
Dec. 1	65	Black Lake -	West Bromwich	Horton and Sons -	Jas. Brannen -	Loader -	38	Explosion of firedamp on the 18th ultimo. Died this day.	1	–	–	–	–	1
„ 2	66	Cotterhill'sFarm	Tipton - -	Darlaston Steel and Iron Company.	J. Gibson -	Pikeman -	48	Fall of "white coal" in thick coal rib and pillar pit, off the corner of a pillar, the result of a "bump."	–	1	–	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives Lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875. Dec. 12	67	Fishley	Walsall	G. and R. Thomas	S. Paskin	Coupler	12	Empty tub run off the rails at the bottom of engine-plane. Injured on the 11th instant. Died next day.	–	–	–	1	–	1
								Total	–	–	–	–	–	75
					IRONSTONE.									
Jan. 3	1	Short Heath	Bloxwick	Pelsall Coal and Iron Company.	Wm. Groom	Loader	15	Deceased removed the fence from the entrance to one of the roadways and rushed in, where he was afterwards found suffocated by carbonic acid gas.	–	–	–	1	–	1
Feb. 26	2	Saltwell's	Dudley	Earl of Dudley	J. Morris	Boadsman	30	Injured by fall of ironstone measure on the 19th November 1874. Died this day.	–	1	–	–	–	1
May 16	3	Himley	Ditto	Ditto	Jos. Brookes	Pikeman	55	Crushed between cage and inset whilst improperly passing through cage at pit bottom. Injured on 15th instant. Died this day.	–	–	1	–	–	1
July 8	4	Haden Hill	Old Hill	Bassano & Co.	Geo. Wheldon	Driver	14	Fall of roof in gubbin measure, caused by a "bump," which knocked the timber out.	–	1	–	–	–	1
Sept. 7	5	Saltwell's	Dudley	Earl of Dudley	Benj. Round	Miner	15	Fall of clod off the face of work. Injured 25th August. Died this day.	–	1	–	–	–	1
„ 9	6	Shut End New	Ditto	Cochrane & Co.	G. Beardsmore	Driver	15	Found dead under skip	–	–	–	1	–	1
Oct. 19	7	Stow Heath	Wolverhampton	W. and J. S. Sparrow & Co.	B. Wollaston	Ditto	16	Whilst trying to lift skip upon the rails the horse started and crushed him.	–	–	–	1	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives Lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous, Underground.	Above ground.	Total.
1875.														
Oct. 21	8	Old Park -	Wednesbury -	Patent Shaft and Axle Company.	J. Conolley -	Pikeman -	49	Explosion of firedamp - -	1	-	–	–	–	1
Dec. 4	9	Stow Heath -	Wolverhampton	W. and J. S. Sparrow & Co.	W. Jones - -	Sinker -	57	Deceased was thoughtlessly standing upon a scaffold whilst materials were being lowered by a rope from an upper inset, when a slab fell and fatally injured him, on the 3rd instant. Died this day.	–	–	1	–	–	1
								Total - - -	1	3	2	3	–	9
						LIMESTONE.								
Oct. 15	1	Wren's Nest -	Dudley - -	Earl of Dudley - -	J. Roberts - -	- - -	—	Injured by a piece of limestone from a blast on the 6th instant. Died this day.	–	–	–	1	–	1

LIST of WORKING COLLIERIES in the SOUTH STAFFORDSHIRE AND WORCESTERSHIRE DISTRICT for the Year 1875.

No.	Name of Colliery.	Where situated.	Owner's Name.
1	Aldridge	Walsall	Aldridge Colliery Company.
2	Ash Tree	Old Hill	James Holcroft.
3	Amblecote	Stourbridge	Hill and Allchurch.
4	Albert	Darlaston	David Rose.
5	Alston	Oldbury	Alston Colliery Company.
6	Ashmore Park	Wednesfield	Ashmore Park Colliery Company.
7	Alberley	Stourport	John Bailey.
8	Bentley	Walsall	Chillington Iron Company, Limited.
9	Balls Hill	West Bromwich	Patent Shaft and Axle Company.
10	Burrs	Wednesbury	Ditto.
11	Bradley	Bilston	G. B. Thorneycroft and Company.
12	Bescot	Walsall	Darlaston Steel and Iron Company. Ironstone.
13	Bullpiece	Darlaston	Ditto.
14	Bovereux	Bilston	Daniel Rogers.
15	Bear Hall	Ditto	Isaac Whitehouse.
16	Bunkers Hill	Ditto	Thomas Price.
17	Blackheath	Rowley Regis	W. H. Dawes.
18	Blacklake	West Bromwich	Horton and Sons.
19	Barbor's Field	Bilston	Barbor's Field Company.
20	Brades	Oldbury	Stour Valley Coal and Iron Company, Limited.
21	Birchill's Hall	Walsall	Maiden and Parkes.
22	Brettell Lane	Brierley Hill	G. R. Harrison.
23	Bradley and Hallfields	Bilston	J. Bagnall and Sons, Limited.
24	Brades Hall	Oldbury	Brades Hall Colliery Company.
25	Blackacre	Dudley	Peter Wright and Sons.
26	Barn Farm	Darlaston	Shadrach Speak. Ironstone.
27	Birchills New	Walsall	George Williams.
28	Broadwell	Oldbury	Noah Parkes.
29	Brettell Lane	Brierley Hill	Trotter, Haines, and Company.
30	Brereton	Rugeley	Earl of Shrewsbury.
31	Blakeley Wood	Wednesbury	Wilson and Griffiths.
32	Brickhouse	West Bromwich	West Bromwich Colliery Company.
33	Bumble Hole	Dudley	Turner and Skelding.
34	Baptist End	Ditto	Parker and Company.
35	Brownhills	Walsall	Colonel Harrison.
36	Bush Farm	West Bromwich	Jones and Griffiths.
37	Birds Leasow	Dudley	Robinson and Jones.
38	Burnt Tree	Ditto	Joseph Aston.
39	Blackwagon	Corngreaves	New British Iron Company.
40	Bearmore	Ditto	Ditto.
41	Bescott	Walsall	Addenbrookes and Company.
42	Brierley	Bilston	Executors of John Yardley.
43	Barrow Hill Coppice	Dudley	Woodall and Company.
44	Bucket's Leasow	Bewdley	Thomas Aston.
45	Bayton	Ditto	T. Wyatt and Son.
46	Blowers Green (part)	Dudley	Edwin Sunderland.
47	Blowers Green (part)	Ditto	Joseph Plimmer.
48	Broadwaters	Darlaston	David Rose.
49	Brettell Lane	Brierley Hill	Harris and Pearson.
50	Breen Ridding	Bilston	T. and J. Fellows.
51	Bromford and Blakeley Hall	West Bromwich	Blakeley Hall Colliery Company.
52	Bradley Lodge	Bilston	Hawkins and Bradley.
53	Barn Farm	Darlaston	Richard Atkiss. Ironstone.
54	Batchcroft	Bilston	J. Davies and Company.
55	Bentley	Willenhall	Bentley Colliery Company.
56	Battyfield	Bilston	W. Smith.
57	Belle Isle New	Brierley Hill	G. Fothergill.
58	Buffery New	Dudley	W. Gould.
59	Buffery Old	Ditto	J. Jones and Sons.
60	Bradley Row	Bilston	W. Bickley.
61	Bilston New	Ditto	J. Foster and Company.
62	Bellsmoor	West Bromwich	Jos. Bailey and Company.
63	Bircheyfield	Oldbury	Churchbridge Colliery Company.
64	Bradford	Walsall	T. Thompson and Company.
65	Broadwaters	Wednesbury	W. Lowe.
66	Bretwell Hall	Brierley Hill	C. Skelding.
67	Brades New	Oldbury	Baker and Company.
68	Bloxwich	Walsall	Bloxwich Colliery Company.

List of Collieries—*continued.*

No.	Name of Colliery.	Where situated.	Owner's Name.
69	Cemetery	Bilston	Richard Atkiss.
70	Cooper's Bank	Dudley	Woodall and Company.
71	Cradley Heath	Brierley Hill	Parsons and Cooper.
72	Cemetery	Bilston	R. and S. Bray.
73	Cotterhill's Farm	Tipton	Darlaston Steel and Iron Company.
74	Cradley Park	Stourbridge	J. King and Company.
75	Crescent	Willenhall	J. Bagnall and Sons.
76	Cold Lanes	Bilston	Henry Marsom.
77	Coppice	Walsall	J. Owen and Company.
78	Crookhay	West Bromwich	Horton and Sons.
79	Can Lane	Bilston	J. W. Caddick.
80	Clifton	Oldbury	Joseph Collins.
81	Coneygre	Tipton	Earl of Dudley.
82	Clothiers	Willenhall	Chillington Iron Company.
83	Causeway Green	Oldbury	John Hadley.
84	Cole's Farm	West Bromwich	Cole's Farm Colliery Company.
85	Coseley New	Bilston	Messrs. Smith.
86	Cannock and Rugeley	Rugeley	Cannock and Rugeley Colliery Company.
87	Cradley	Brierley Hill	Cradley Colliery Company.
88	Copse Land	Bilston	H. B. Whitehouse and Son.
89	Curbirch	Ditto	Ditto.
90	Crows Bridge	Ditto	Ditto.
91	Cooper's Bank	Dudley	W. Webb.
92	Cockshutt's	Wolverhampton	Isaiah Aston and Sons.
93	Coneygre (part)	Tipton	Samuel Rowley.
94	Cop Hall	West Bromwich	J. Bagnall and Sons.
95	Cotsall	Corngreaves	New British Iron Company.
96	Conduit	Walsall	Conduit Colliery Company.
97	Crabtree (part)	Wednesbury	Guy Brothers.
98	Ditto	Ditto	James Bullock.
99	Clattershall	Brierley Hill	Edward Bowen.
100	Cannock Chase	Walsall	Cannock Chase Colliery Company.
101	Cannock and Leacroft	Cannock	Cannock and Leacroft Colliery Company.
102	Coltham	Walsall	Pelsall Coal and Iron Company.
103	Cleveland	Tipton	Parkes and Company.
104	Crescent	Willenhall	Thomas Hayes.
105	Castle Bridge	Wednesfield	Castle Bridge Colliery Company.
106	Chillington (part)	Wolverhampton	Woollaston and Southan.
107	Ditto	Ditto	Haywood and Hodgkiss.
108	Ditto	Ditto	C. Thomas and Company.
109	Ditto	Ditto	Styler and Company.
110	Cannock and Wimblebury	Hednesford	Cannock and Wimblebury Colliery Company.
111	Cricket Field	West Bromwich	Hatton.
112	Church	Bilston	Church Colliery Company.
113	Crescent Old	Willenhall	A. Deakin.
114	Coneygre (part)	Tipton	Churchill and Company
115	Coppice Old	Wyrley	J. Hawkins.
116	Cannock Lodge	Walsall	Cannock Lodge Colliery Company.
117	Cakemore	Oldbury	Cakemore Colliery Company.
118	Coal Pool	Walsall	Willenhall Colliery Company.
119	Doe Bank	Tipton	Thos. Longmore.
120	Darlaston Green	Darlaston	Darlaston Steel and Iron Company.
121	Denbigh Hall	Tipton	Griffiths Brothers.
122	Deepfields	Bilston	Stour Valley Coal and Iron Company.
123	Deans	Wednesfield	G. and R. Thomas.
124	Deans Old	Ditto	Ditto.
125	Deepfields	Bilston	Earl of Dudley.
126	Dudley Wood	Dudley	N. Hingley and Sons.
127	Dudley Port Old	Tipton	Shorthouse and Clifton.
128	Dudley Port	Ditto	Pessol and Company.
129	Deepmoor	Walsall	J. Bagnall and Sons.
130	Dibdale	Dudley	Mrs. Gibbons.
131	Darlaston	Darlaston	David Rose.
132	Delph	Brierley Hill	Hickman and Company.
133	Delph Lower	Ditto	Harper and Moores.
134	Delph	Ditto	J. Hall and Company.
135	Ditto	Ditto	Harris and Pearson.
136	Duke	Darlaston	Samuel Mason.
137	Dixon's Green	Dudley	Samuel Salt.
138	Darlaston	Darlaston	Patent Shaft and Axletree Company.

List of Collieries—*continued.*

No.	Name of Colliery.	Where situated.	Owner's Name.
139	Ettingshall Lodge	Wolverhampton	J. and W. Bowen.
140	Ditto	Ditto	Z. Dibble.
141	Ditto	Ditto	J. Cadman.
142	Essington Farm	Walsall	Essington Farm Colliery Company.
143	Essington Wood	Wolverhampton	Darlaston Steel and Iron Company.
144	Ebenezer	West Bromwich	Executors of B. Whitehouse.
145	Eight Locks	Ditto	Barbor's Field Company.
146	Eagle	Old Hill	Skidmore and Webster.
147	Ettingshall Park	Bilston	Cole and Bloomer.
148	Ettingshall	Ditto	Stephen Cole, Executors of.
149	Ditto	Ditto	H. B. Whitehouse and Son.
150	Ditto	Ditto	C. Dyke and Son.
151	Ditto	Ditto	S. Bannister and Company.
153	Ettingshall New	Ditto	Geo. Cockayne.
152	Ettingshall	Ditto	John Davis.
154	East Cannock	Hednesford	East Cannock Colliery Company.
155	Fallings Heath	Darlaston	Thomas Longmore.
156	Furnace Leasow	Wednesbury	Patent Shaft and Axletree Company.
157	Fishley	Walsall	Fishley Colliery Company.
158	Foxyards	Tipton	Earl of Dudley.
159	Foxyards (part)	Ditto	Hughes and Hartland.
160	Ditto	Ditto	Edward Wones.
161	Ditto	Ditto	A. H. Colbourn.
162	Ditto	Ditto	S. and J. Wilkinson.
163	Ditto	Ditto	George Powell.
164	Ditto	Ditto	T. Smith and Sons.
165	Ditto	Ditto	Powell and Hunt.
166	Foxyards New	Ditto	Jeremiah Dawes.
167	Foxyards (part)	Ditto	James Bates.
168	Ditto	Ditto	J. Colbourn.
169	Fair Oak	Rugeley	Fair Oak Colliery Company.
170	Fly	Rowley Regis	Old Hill Drainage Company.
171	Frost	Wyrley	Norris, Lewis, and Hooper.
172	Fox Oak	Brierley Hill	Cartwright and Company.
173	Fallings Heath	Darlaston	Darlaston Iron Bridge Company.
174	Forest	Walsall	Thomas Checkley.
175	Fibbersley	Willenhall	Abraham Hill.
176	Grace Mary New	Dudley	S. Minton and Company.
177	Gospel Oak	Tipton	Grazebrook and Aston.
178	Groveland	Ditto	J. Bagnall and Sons.
179	Granville and Gorsty	Old Hill	Swindell and Collis.
180	Green Lane	Bilston	William Green. Ironstone.
181	Greaves	Ditto	Greaves Colliery Company.
182	Gawn	Old Hill	N. Hingley and Sons.
183	Golds Hill	West Bromwich	Guy Brothers.
184	Ditto	Ditto	Joseph Whitehouse.
185	Golden Orchard	Ditto	J. E. Partridge.
186	Great Wyrley	Walsall	Great Wyrley Colliery Company.
187	Green Lane	Ditto	J. W. Baker.
188	Grange New	Oldbury	Noah Parkes.
189	Great Bridge	Tipton	A. Hickman.
190	Ditto	Ditto	Great Bridge Colliery Company.
191	Horsley	Tipton	Dixon and Company.
192	Hange	Ditto	Round Brothers.
193	Hallbridge	Ditto	Downing and Priests.
194	Herbert's Park	Bilston	David Jones and Sons.
195	Hall Park (part)	Ditto	S. Day.
196	Ditto	Ditto	Lees and Burrows.
197	Highfields	Ditto	Barbor's Field Company.
198	Ditto	Ditto	H. B. Whitehouse and Son.
199	Hungary Hill	Stourbridge	Rufford and Company.
200	Hayes	Ditto	Fisher and Company.
201	Hill's Field	Ditto	J. A. Timmis.
202	Hilton	Walsall	Hilton Colliery Company.
203	Hatherton	Ditto	G. and R. Thomas.
204	Harden	Ditto	E. Crapper.
205	Highbridge	Ditto	Ditto.
206	Hamstead	Ditto	Hamstead Colliery Company.
207	Himley	Dudley	Earl of Dudley.

List of Collieries—*continued.*

No.	Name of Colliery.	Where situated.	Owner's Name.
208	Himley (part)	Dudley	J. H. Chavasse.
209	Haughton	Ditto	D. Bryce and Company.
210	Hayes	Rugeley	Earl of Shrewsbury.
211	Hateley Heath	West Bromwich	Hateley Heath Colliery Company.
212	Homer Hill	Brierley Hill	Homer Hill Colliery Company.
213	Hawne New	Corngreaves	New British Iron Company.
214	Heathfield	Darlaston	C. Cotterill and Company.
215	Hawne	Halesowen	Hawne Colliery Company.
216	Haden Hill	Old Hill	W. Bassano and Company.
217	Jervoise	West Bromwich	Samuel Lewis and Son.
218	James Bridge	Walsall	J. Bagnall and Sons.
219	King's Hill	Wednesbury	Bayley and Hunt.
220	Ditto	Ditto	Joseph Springthorpe.
221	Keeling	West Bromwich	Henry Wythes.
222	Ketley	Dudley	James Timmins.
223	Knowle	Rowley Regis	Dimmack and Bunn.
224	Lunts	Stourbridge	G. K. Harrison.
225	Leigh's Wood	Walsall	Leigh's Wood Colliery Company.
226	Lyttleton Hall	West Bromwich	W. H. Dawes.
227	Lodge Holes	Wednesbury	Patent Shaft and Axle Company.
228	Leabrook (part)	Ditto	J. Russell and Company.
229	Ditto	Ditto	Thomas Longmore.
230	Ditto	Ditto	Edward Smith.
231	Ladymoor	Bilston	Tame Iron Company.
232	Ditto	Ditto	W. and J. S. Sparrow and Company.
233	Lunt	Ditto	S. Groncott and Sons.
234	Lanehead Bridge	Willenhall	Joseph Hawkins.
235	Little London	Ditto	John Hill.
236	Ditto	Ditto	Mark Gallear.
237	Lanesfield	Bilston	J. and G. Spruce and Company.
238	Lye	Brierley Hill	Hickman and Company.
239	Millfield	Bilston	W. and J. S. Sparrow and Company.
240	Moorcroft Old	Ditto	David Skidmore.
241	Moxley	Ditto	S. Groncott and Sons.
242	Mounts	Wednesbury	Patent Shaft and Axle Company.
243	Moorlands	Ditto	Edwin Lewis.
244	Monway Field	Ditto	Patent Shaft and Axle Company.
245	Millpool	West Bromwich	Ditto.
246	Millfield	Ditto	Ditto.
247	Marsh Lane	Ditto	Sam. Lewis and Son.
248	Merrill's Hole	Willenhall	Chillington Iron Company.
249	Moseley Hole	Ditto	Bradley and Robinson.
250	Monway (part)	Wednesbury	Isaac Smith and Company.
251	Mamble	Bewdley	Thos. Aston.
252	Millfield	Dudley	Geo. Glaze.
253	Mudhall	Ditto	Stephen Hale.
254	Moor Lane	Brierley Hill	William Walker.
255	Manor	Halesowen	J. S. Dawes.
256	Mount Pleasant	Wolverhampton	Weaver, Beswick, and Company.
257	Moat	Walsall	E. Crapper.
258	Mid Cannock	Cannock	Mid Cannock Colliery Company.
259	Mount Pleasant	Bilston	Dudley and Company.
260	Netherton	Dudley	Messrs. Dunn.
261	Netherton Old	Ditto	M. and W. Grazebrook.
262	Newbury Lane	Oldbury	Nicklin and Whitehead.
263	Netherend	Brierley Hill	Joseph King and Company.
264	Neachills (part)	Willenhall	P. Williams and Sons.
265	Ditto	Ditto	S. Groncott and Sons.
266	Neachills Hall	Ditto	Barbor's Field Company.
267	Newfield	Walsall	Maiden and Parkes.
268	Norton Cannock	Ditto	Norton Cannock Colliery Company.
269	North Western	Darlaston	Staffordshire Bolt and Nut Company.
270	New Cross	Wolverhampton	H. B. Whitehouse and Sons.

List of Collieries—*continued.*

No.	Name of Colliery.	Where situated.	Owner's Name.
271	Old Heath	Wolverhampton	H. and B. Caswell.
272	Old Park	Dudley	R. Mills and Company.
273	Ditto	Ditto	Earl of Dudley.
274	Ditto	Ditto	S. Garratt and Son.
275	Oak Farm (part)	Ditto	John Walker.
276	Ditto	Ditto	J. Greenaway.
277	Oakham	Ditto	Oakham Colliery Company.
278	Orchard	Brierley Hill	John Raybould.
279	Old Level	Ditto	Henry Hall.
280	Old End	Bilston	S. Groncott and Sons.
281	Oak House	West Bromwich	Oak House Colliery Company.
282	Old Hill	Old Hill	C. Yardley.
283	Ditto	Ditto	J. and W. Pearson.
284	Old Hall	Bewdley	Edward Ree.
285	Ocker Hill	Tipton	Bayley and Jones.
286	Old Hill	Old Hill	N. Hingley and Sons.
287	Parkfield	Wolverhampton	Isaac Onions.
288	Ditto	Ditto	Thomas Guy.
289	Piercey	West Bromwich	Cox and Edwards.
290	Pump House	Ditto	J. Bagnall and Sons.
291	Parkes	Ditto	Parkes and Company.
292	Pool Hayes	Willenhall	Pool Hayes Colliery Company.
293	Portobello	Ditto	W. Ward and Sons.
294	Pool Meadow	Ditto	Bradley and Robinson.
295	Pelsall Hall	Walsall	S. M. Morgan and Company.
296	Pelsall	Ditto	Pelsall Coal and Iron Company.
297	Paradise	Ditto	Thomas Vaughan.
298	Parkhead Furnace	Dudley	Evers and Martin.
299	Parkhead	Ditto	S. Garratt and Son.
300	Planet	Ditto	John Raybould.
301	Prince of Wales	Ditto	Dudley Colliery Company.
302	Portway Hall	Rowley Regis	W. H. Dawes.
303	Prince's End	Tipton	Barbor's Field Company.
304	Ditto	Ditto	Tibbington Colliery Company.
305	Park Lane	Ditto	J. F. and J. Colbourn.
306	Priorfield	Bilston	H. B. Whitehouse and Sons.
307	Paddock	Ditto	Ditto.
308	Priestfield (part)	Ditto	Hodgkiss and Lett.
309	Priestfield Old (part)	Ditto	Joseph Barker.
310	Ditto	Ditto	Stephen Hill and Son.
311	Ditto	Ditto	Smith and Roe.
312	Priestfield New	Ditto	W. Ward and Sons.
313	Priestfields	Ditto	W. Ward and Sons. Ironstone.
314	Priestfields (part)	Ditto	J. Spruce and Company.
315	Priestfields Old	Ditto	North and Millard.
316	Pemberton	Ditto	Caswell and Nicholls.
317	Parkfield (part)	Wolverhampton	Costley and Company.
318	Parkfield Road	Ditto	Enoch Cooper.
319	Perry	Birmingham	Perry Colliery Company.
320	Palmerston	Wyrley	Palmerston Colliery Company.
321	Pensax	Stourport	J. Higginbottom.
322	Quarry	Bilston	E. Hickman.
323	Riddings	Bilston	Smith and Roe.
324	Reddall Hill	Old Hill	N. Hingley and Sons.
325	Riddings	Ditto	Skidmore and Waldron.
326	Ridgacre	West Bromwich	Jos. Bailey and Sons.
327	Roughwood	Walsall	Roughwood Colliery Company.
328	Ramrod Hall	Oldbury	Earl of Dudley.
329	Rounds Green New	Ditto	Reuben Farley.
330	Radnal Field	Ditto	C. M'Kenley and Company.
331	Rounds Green	Ditto	Alston Colliery Company.
332	Round's Hill	Tipton	Earl of Dudley.
333	Rocket	Ditto	Ditto.
334	Russell's Hall (part)	Dudley	Isaac Naylor.
335	Ditto	Ditto	Capewell and Skidmore.
336	Ditto	Ditto	John Waterfield.
337	Rectory	Ditto	J. and W. Pearson.
338	Rookery	Bilston	Stephen Cole, Executors of.
339	Robin Hood	Willenhall	W. Simcock.

List of Collieries—*continued.*

No.	Name of Colliery.	Where situated.	Owner's Name.
340	Rough Hay	Darlaston	Addenbrookes and Company.
341	Rowley Hall	Oldbury	Rowley Hall Colliery Company.
342	Roway New	Ditto	Burroughs and Gorton.
343	Rough Hills	Wolverhampton	James Cadman.
344	Rowley Station	Rowley Regis	Rowley Station Colliery Company.
345	Rockmoor	Bewdley	Fred. Rogers.
346	Stallings	Dudley	J. and W. Pearson.
347	Shut End	Ditto	J. Bradley and Company.
348	Shut End New	Ditto	Cochrane and Company.
349	Sandfield	Ditto	Geo. Glaze.
350	Standhills	Ditto	Brown and Freer.
351	Springfield	Ditto	Dudley Colliery Company.
352	Ditto	Ditto	Daniel Mason.
353	Swan	Ditto	E. J. Cartwright.
354	Stourbridge Extension	Ditto	Himley Firebrick Company.
355	Saltwells	Ditto	Earl of Dudley.
356	Stow Lawn	Bilston	J. Spruce and Company.
357	Spring Vale (part)	Ditto	Thomas Bantock.
358	Ditto	Ditto	J. and T. Williams.
359	Spring Vale (6 acre)	Ditto	Stephen Cole, Executors of.
360	Stonefields	Ditto	Edward Davies.
361	Spring Hill	Wolverhampton	Darlaston Steel and Iron Company.
362	Stow Heath	Ditto	W. and J. S. Sparrow and Company.
363	Stow Heath (part)	Ditto	Thomas Bryan.
364	Swan	West Bromwich	Swan Colliery Company.
365	Stone Cross	Ditto	Ann Spittle.
366	Swan Farm	Ditto	Allen and Holden.
367	South Staffordshire	Ditto	South Staffordshire Colliery Company.
368	Sandwell Park	Ditto	Sandwell Park Colliery Company.
369	Spon Lane	Ditto	Spon Lane Colliery Company.
370	Sampson	Oldbury	Richard Haines.
371	Speedwell	Ditto	Clifton and Collins.
372	Summerford	Willenhall	Williams and Barker.
373	Short Heath	Walsall	Pelsall Coal and Iron Company.
374	South Cannock	Wyrley	South Cannock Colliery Company.
375	Station	Walsall	Station Colliery Company.
376	Shatterford	Stourport	Thomas Bertram.
377	Tipton Moat	Tipton	Tipton Moat Colliery Company.
378	Tipton Green	Ditto	Ditto.
379	Tividale Hall	Ditto	W. and C. E. Bradley.
380	Toll End	Ditto	Toll End Colliery Company.
381	Tividale	Ditto	Waterloo Colliery Company.
382	Tibbington	Ditto	Tibbington Colliery Company.
383	Tividale	Ditto	Round Brothers.
384	Tipton Hall	Ditto	Isaac Whitehouse.
385	Talbot	West Bromwich	Talbot Colliery Company.
386	Trentham	Willenhall	Solly and Urwick.
387	Tame Mill	Ditto	Joseph Hincks.
388	Titford Long Meadow	Oldbury	Messrs. Dunn.
389	Titford	Ditto	Chapman and Shakespeare.
390	Timbertree	Corngreaves	Birmingham.
391	Tansey Green	Dudley	Woodall and Company.
392	Tansley Hill	Ditto	John Carlyle.
393	Thorns	Brierley Hill	Mobberley and Bayley.
394	Terry's Brook	Darlaston	G. W. Nevitt.
395	Toll Gate	Bilston	John Froggatt.
396	Union	West Bromwich	Stour Valley Coal and Iron Company.
397	Upper Gornal	Dudley	Harvey and Fithern.
398	Ditto	Ditto	Cartwright and Company.
399	Ditto	Ditto	W. H. Waterfield and Company.
400	Victoria	Tipton	Victoria Colliery Company.
401	Ditto	Walsall	J. Millward and Company.
402	Ditto	Willenhall	Dulson and McGregor.
403	Valentia	Oldbury	Whitehouse and Smith.

List of Collieries—*continued.*

No.	Name of Colliery.	Where situated.	Owner's Name.
404	Witley Colliery	Halesowen	Witley Colliery Company.
405	Walsall Wood	Walsall	Walsall Wood Colliery Company.
406	Woodwell	Ditto	Addenbrookes and Company. Ironstone.
407	Wyrley Cannock	Ditto	Wyrley Cannock Colliery Company.
408	Wallbut	Bilston	Bradley Brothers and Southan.
409	Wolverhampton Road	Ditto	Hyde and Company.
410	Waterloo	Ditto	Bilston Iron Company.
411	Wednesbury Oak	Tipton	P. Williams and Sons.
412	Willingsworth (part)	Ditto	J. Allmark.
413	Ditto	Ditto	J. Hickinbottom.
414	Ditto	Ditto	Parsons and Simms.
415	Ditto	Ditto	Isaac Griffiths.
416	Wednesbury Old Park	Wednesbury	Patent Shaft and Axle Company.
417	Woodside	Dudley	Cochrane and Company.
418	Windmill End	Ditto	Dudley Colliery Company.
419	Withymoor	Ditto	Pearson and Shakespeare.
420	Windmill End	Ditto	Old Hill Drainage Company.
421	Withymoor New	Ditto	Thos. Lewellyn.
422	Wednesbury New Mine	West Bromwich	Horton and Sons.
423	White's Farm	Ditto	Jos. Bailey and Sons.
424	Whitehall	Ditto	Jas. Kendrick.
425	Whyley	Ditto	Farley and Duce.
426	Wall Face	Ditto	Walton and Fletcher.
427	Witton Lane	Ditto	Dunn and Griffiths.
428	Wolverhampton	Wolverhampton	Jos. Turley.
429	Wolverhampton Rough Hills	Ditto	Wilham and Fenn.
430	Willenhall Road	Ditto	Edge and Hodgkiss.
431	Willenhall New	Willenhall	Fletcher and Company.
432	Welsh End	Ditto	Corbett and Simms.
433	Willenhall New	Ditto	Osier Bed Iron Company.
434	Willenhall	Ditto	Ditto.
435	Ditto	Ditto	Willenhall Colliery Company.
436	Wallows	Brierley Hill	Earl of Dudley.
437	Wallows (part)	Ditto	John Raybould.
438	Ditto	Ditto	S. Garratt and Son.
439	West Cannock	Hednesford	West Cannock Colliery Company.
440	Whitehall	Brierley Hill	Whitehall Colliery Company.
441	Waterfall Lane	Old Hill	William Mills.
442	Ditto	Ditto	Old Hill Drainage Company.
443	Whiteheath	Oldbury	Churchbridge Colliery Company.
444	Woodsetton	Sedgley	Parkes, Brothers, and Company.
445	New Tree	Kingswinford	Barnbrooks and Caswell.
446	Ditto	Rowley Regis	Henry Hall.

List of the Fireclay Mines in the South Staffordshire and Worcestershire District for the Year 1875.

No.	Name of Mine.	Where situated.	Owner's Name.
1	Albert	Darlaston	David Rose.
2	Amblecote	Stourbridge	J. Hall and Company.
3	Ditto	Ditto	Hickman and Company.
4	Buffery Old	Dudley	J. Jones and Sons.
5	Brettell Lane	Stourbridge	Trotter, Haines, and Company.
6	Ditto	Ditto	Perrins and Harrison.
7	Ditto	Ditto	Harris and Pearson.
8	Crows Bridge	Bilston	H. B. Whitehouse and Sons.
9	Clattershall	Stourbridge	Ed. Bowen.
10	Cradley Station	Brierley Hill	Mobberley and Bayley.
11	Can Lane	Bilston	Clarke and Caddick.
12	Cotsall	Corngreaves	New British Iron Company.
13	Coneygre	Tipton	Sam. Rowley.
14	Clatterbatch	Stourbridge	H. Owen.
15	Delph Lower	Brierley Hill	Harper and Moores.
16	Delph	Ditto	J. Hall and Company.
17	Ditto	Ditto	Hickman and Company.
18	Ditto	Ditto	Harris and Pearson.
19	Ditto	Ditto	E. J. and J. Pearson.
20	Dibdale	Dudley	Mrs. Gibbons.
21	Deepmoor	Walsall	J. Bagnall and Sons, Limited.
22	Freehold	Brierley Hill	Trustees of R. Horner.
23	Foxyards	Tipton	J. Colbourn.
24	Ditto	Ditto	Geo. Hartland.
25	Ditto	Ditto	James Bates.
26	Hayes	Brierley Hill	Fisher and Company.
27	Hungary Hill	Stourbridge	Rufford and Company.
28	Lye	Stourbridge	Hickman and Company.
29	Lunts	Ditto	Perrins and Harrison.
30	Moor Lane	Brierley Hill	J. Hall and Company.
31	Merry Hill	Ditto	Mobberley and Perry.
32	Netherend	Ditto	Perrins and Harrison.
33	Ditto	Ditto	J. King and Company.
34	Oak Farm	Dudley	John Walker.
35	Ditto	Ditto	Himley Firebrick Company.
36	Porridge Hall	Stourbridge	Mobberley and Bayley.
37	Rounds Hill	Tipton	Earl of Dudley.
38	Ravensich	Brierley Hill	Edward Bowen.
39	Saltbrook	Brierley Hill	Mobberley and Bayley.
40	Shepherd's Brook	Stourbridge	King Brothers and Company.
41	Tipton Hall	Tipton	Isaac Whitehouse.
42	Thorns	Brierley Hill	Earl of Dudley.
43	Ditto	Ditto	Harper and Moores.
44	Ditto	Ditto	Mobberley and Bayley.
45	Turner's Lane	Ditto	Harris and Pearson.
46	Upper Gornal	Dudley	Cartwright and Company.
47	Ditto	Ditto	W. H. Waterfield and Company.
48	Wittymoor	Stourbridge	Harris and Pearson.

LIST of the METALLIFEROUS MINES in SOUTH STAFFORDSHIRE and WORCESTERSHIRE.

No.	Name of Mine.	Where situated.	Owner's name.
1	Hatherton - - -	Walsall - -	E. Crapper.
2	Portland Street - -	Ditto - - -	Ditto.
3	Birchills - - -	Ditto - -	T. Mathews.
4	Daw End - - -	Ditto - - -	Geo. Strongitharm.
5	Groveland - -	Tipton - -	Messrs. Bagnall.
6	Dudley Port - -	Ditto - - -	Dixon and Company.
7	Wren's Nest - -	Dudley - -	Earl of Dudley.
8	Castle Mill - - -	Ditto - - -	Ditto.
9	Coneygree - -	Ditto - - -	Ditto.
10	Old Park - - -	Wednesbury - -	The Patent Shaft and Axle Company.
11	Tividale Hall - -	Tipton - -	Messrs. Bradley.

Mr. Wales' Report.

REPORT on the WORKING of the MINES INSPECTION ACT (23 & 24 Vict. c. 151.) for the SOUTH WALES DISTRICT for the Year ended 31st December 1875.—By THOMAS E. WALES, Esq.

SIR, Swansea, 30th March 1876.

As Inspector of Mines for the South Wales District, I have the honour to report as follows for the year ended 31st December 1875.

	1875.	1874.
Total number of persons employed - -	51,248	51,513
Tons of coal, &c. raised - - - -	10,274,645	11,763,643
Number of collieries - - - -	362	363
Number of fatal accidents - - - -	104	120
„ lives lost - - - -	127	134
„ persons employed per fatal accident -	493	429
„ „ life lost - -	404	384
„ tons of mineral raised per fatal accident -	98,795	98,854
„ „ life lost -	80,903	87,789

The following table shows the number of fatal accidents and lives lost each month, and the circumstances under which they occurred.

LIVES LOST BY THE ACCIDENTS.

1875.	Number of Fatal Accidents.	Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	On Surface.			Total Deaths.
								Machinery.	Miscellaneous.	Boilers Bursting.	
January - -	6	—	1	2	—	1	1	—	1	—	6
February - -	7	1	2	2	—	—	—	1	1	—	7
March - -	11	—	1	3	1	4	1	—	1	—	11
April - - -	5	—	—	1	—	2	—	—	2	—	5
May - -	7	—	2	2	—	1	2	—	—	—	7
June - - -	7	—	1	3	—	1	2	—	—	—	7
July - -	14	—	1	6	—	6	3	—	—	—	16
August - - -	5	—	1	4	—	1	1	—	—	—	7
September - -	8	2	—	2	—	1	5	—	—	—	10
October - - -	19	—	4	4	—	2	6	1	3	—	20
November - -	7	1	—	2	—	1	2	—	1	—	7
December - -	7	16	—	1	—	2	4	—	—	—	23
	103	20	13	32	1	22	27	2	9	—	126
Ironstone - -	1	—	—	1	—	—	—	—	—	—	1
TOTALS -	104	20	13	33	1	22	27	2	9	—	127

Four explosions have occurred during the year, involving the loss of 20 lives as against six, with a loss of 11 lives, in 1874.

The first explosion (No. 7 in the list) took place on the 3rd February, in the Wyndham Colliery, Ogmore Valley, belonging to the Llynvi, Tondû, and Ogmore Coal and Iron Co., (Limited), resulting in the loss of one life. The deceased was the carpenter, and had occasion to go into the lodge room, near the bottom of the shaft, where a small quantity of

gas had accumulated which he exploded with his naked light. He was not seriously burnt, but, unfortunately, in returning from the lodgeroom, after he was burnt, he fell into the sump, and was killed.

The second explosion (No. 65), occurred in the Ynysfeio Colliery, Rhondda Valley, belonging to the Troedyrhiw Coal Co., on the 7th September, and was attended with the loss of two lives. The two deceased with five others were engaged in cutting the floor, to increase the height of the level, and were putting the rubbish into an old disused stable. In this old stable were two cavities in the roof, and owing to the area of the airway, through which the air passed, having been reduced by stowing the rubbish into it, gas accumulated there. All the seven men were supplied with safety lamps, but during the time they were engaged at their work, previous to the explosion, one of the deceased accidentally broke his lamp, which rendered it quite unsafe. Instead of at once extinguishing and taking the lamp out to the lamp station, as he ought to have done, the deceased continued to work with it, and there can be no doubt that the gas was exploded by that very lamp. Doubtless all, or nearly all, of the seven men were well aware of the defective lamp, and had they insisted, as they ought to have done, on the deceased discontinuing to use it, in all probability no explosion would have ensued. With such calamities, as are unfortunately of such frequent occurrence in this district, it is difficult to conceive how men can be guilty of such recklessness as was evinced in this case.

The third explosion (No. 90 in the list), occurred on the 6th November, in the Llantwit Colliery, near Llantrissant. The deceased, who had been instructed by the manager to examine his place with a safety lamp, omitted to do so, went into the stall with an open light, and exploded the gas which had accumulated there. The fourth and last explosion (by far the most serious, which happened during the year,) took place on the 6th December, in the Llan Colliery, causing the loss of 16 lives. The Llan Colliery, which belongs to Messrs. T. W. Booker and Co., (Limited), is situated about six miles from Cardiff, the coals viz.: "Hard Vein," "Brass Vein," and "Forked Vein," are won by a slope or drift, dipping from the surface, and intersecting the different veins at different points.

With the exception of the "Forked Vein," which was worked with locked safety lamps, these coals are not of a fiery nature, and they were worked with open or naked lights. The workings in the "Brass Vein," in which the explosion occurred, were of a very limited extent, owing to much faulty ground having been met with, which affected the coal prejudicially; only nine men were employed in these workings. After the two exploring levels had reached a certain point, the coal, not improving in quality, it was determined to finally abandon them, and to work out the pillars. Unfortunately, as soon as this was fixed upon, the airway (which conveyed the air into the faces of the two levels) was neglected, and it gradually became contracted in area till at last it could not be travelled; as a natural consequence little or no air reached the far end. As has already been stated, the "Brass Vein" was not a fiery vein. Indeed, the evidence at the inquest went to show, that, in prosecuting these workings which had extended over a considerable period, there were only two places where gas in any quantity had been met with. During the time these two places were at work proper means were adopted to keep them free from gas, to enable the colliers to work there with naked lights; but when it was determined to abandon the working of this vein with the exception of working away the pillars, the means hitherto adopted for the proper ventilation of these two places were discontinued, the roof was allowed to fall, and doubtless gas accumulated in one or both of them. Such places being at a lower level than the working places where naked lights were used, the gas, owing to its light specific gravity, would naturally flow from the lower to the higher level, and doubtless it was exploded there. The ventilation of the "Brass Vein" was not only defective as regards quantity of air passing, but the mode of distributing the air through the workings was of the worst possible kind. Instead of conveying the fresh air to the lowest point, and allowing it to ascend as it became rarified by the heat of the mine, it was taken into the workings at the highest point which necessitated the gas being forced down hill. Such a principle of ventilation always conduces to accumulations of gas in different parts, and especially in the most elevated parts of a colliery.

Wherever practicable, such a system of ventilation ought to be avoided. I consider this explosion and consequent loss of life is fairly attributable to defective ventilation. The manager (perhaps it is only justice to state) had only acted in that capacity for a few months prior to the explosion; and in his evidence at the inquest he swore that he was not aware of the bad condition and contracted area of the airway referred to; but, I think, it is much to be regretted that he had not inspected the airway himself. The fireman (whose duty it was to travel that airway frequently) of course well knew of its bad condition. He stated, in his evidence, that he had drawn the attention of the overman (who was his superior officer) to the fact; and that the overman always replied "that as they were only working

away the few pillars left, it (the airway) was sufficient." The overman was among the number killed.

Falls of Roof and Coal.

The total number of deaths from falls was 45 as against 53 in 1874, and I am happy in being able to state in this Report a continued decrease of deaths under this head.

On the 5th July two men were killed by a fall of roof in the Great Western Colliery, Rhondda Valley; the deceased, who were experienced men (one being the fireman and the other a repairer) were engaged in clearing a fall which had taken place in the road conveying the smoke and steam from an underground engine to the bottom of the up-cast shaft, and whilst so engaged another fall occurred, killing them both.

On the 31st of August, three men were killed by a fall of roof, in one of the Maesteg Collieries belonging to the Llynvi, Tondû, and Ogmore Valley Coal and Iron Company (Limited).

I examined the stall on the day after the accident, the stone which no doubt fell without giving any warning must have weighed several tons; the three unfortunate deceased were originally Cornish miners, and had only been employed as coal miners for a short period, about two or three years, I think. Such being the case, I entertained a strong impression that they might not, under such circumstances, have been sufficiently experienced in timbering, &c., to enable them to properly support the roof, &c. The evidence, however, at the inquest, did not substantiate my suspicion; but, on the contrary, it was stated that they were careful men and well able to timber and prop the roof.

On the 9th of September two men were killed by a fall of roof in the Llantwit Colliery, Llantrissant. An inspection of the place, as well as the evidence given at the inquest, showed that the deceased were experienced and careful men, and that, in all probability, the fall of stone took place quite unexpectedly.

Suffocation.

Only one death occurred through suffocation. On the 8th March (No. 14 accident in the list), the fireman in Gorsgoch Colliery, near Cross Inn, Carmarthenshire, was suffocated by going into a place which he well knew contained gas. He left his safety lamp behind, and went into the place, and among the gas, in the dark. Holding the position of fireman, as he did, he ought to have known better.

Shaft Accidents.

The deaths under this head are 22 as against 25 in 1874. With the exception of one accident (No. 50 in the list), which occurred on the 13th of July, at the Tonyrefail Colliery, belonging to or being under the management of Mr. H. Begg, and was attended with the loss of two lives, all were single accidents.

This accident (No. 50), was caused by a trolley (a small carriage used for conveying the rubbish from the top of the sinking shaft to the rubbish tip) falling down the shaft, and upon the two deceased, who, with others, were working at the bottom. The trolley or carriage used was too light, and not at all suitable for such work, and to that fact, doubtless, the accident is to be referred. The arrangements at the top of the shaft were also defective.

On the 18th of August (No. 59), a man was killed by falling down one of the shafts at the Tynybedw Colliery, Rhondda Valley, belonging to Messrs. Thomas and Griffiths.

The deceased was engaged in taking the rubbish (which was brought up the shaft,) to the rubbish tip. Instead of having a proper fence, which is always raised and lowered by the cage or carriage ascending and descending at the top of the shaft, a long piece of wood was used, which was pushed through iron staples by the deceased. It appeared from the evidence given at the inquest that the deceased had omitted to push this piece of wood, which left the top of the shaft quite unprotected, and, it being dark, or nearly so, he pushed the tram into the wrong side, which fell down the shaft, and dragged the deceased with it.

In my opinion, the piece of wood was not such a fence as the Act required, and therefore was not a proper fence. And as the sad accident was entirely due to that fact, I reported the case to you, and, with your permission, proceedings were instituted against the manager for a breach of No. 14 General Rule. The colliery was a new one, and had only been raising coal a few days, or, at most, a few weeks. The case was heard on the 3rd of November, at Pontypridd, by the stipendiary and another magistrate. The magistrates being of opinion that although the piece of wood was not such a safe fence as I suggested and recommended, still, they thought, if it had been attended to by the deceased, it was a proper fence under the Act; they therefore dismissed the case with costs.

Miscellaneous Underground Accidents.

The number of deaths under this head is 28 as against 29 in 1874.

One man was killed by suffocation (No. 14 accident), which has already been referred to. Two by an irruption of water. This accident (No. 97), occurred on December 4th, in the Penygraig Colliery, belonging to the Penygraig Coal Co. It was always believed that a great fault, forming a strong and sufficient barrier, intervened between the Penygraig Colliery and the adjoining one, from which the water passed, therefore no boring was resorted to, and the heading, in which the two deceased were engaged, was driven through into the water, which rushed with such force as to completely cut off their escape. I consider there was a lack of proper care on the part of the manager of the Penygraig Colliery in not taking proper steps to ascertain, by comparing his plans with the plans of the adjoining colliery, whether the fault really did or did not exist.

Four persons were killed on incline planes, but, in every case, the Act in reference to places of refuge was complied with.

Fifteen persons were killed by falling under trams as against 21 in 1874.

Four were killed by sundry accidents, viz., two were killed by explosions of gunpowder (No. 33). The deceased, whilst engaged in unramming a hole, the powder ignited, killing him on the spot. His attempting to unram the hole was a violation of No. 8 General Rule. But the discipline, as disclosed during my inspection and at the inquest, was so lax that I am not sure the deceased knew that his so acting was an infringement of any rule. The manager promised to have the General and Special Rules read to the workmen periodically in future. In the other case the deceased was killed by the premature and unexpected ignition of the powder, although the tools he was using were in accordance with the requirements of No. 8 General Rule.

One person was killed by the kick of a horse.

Surface Accidents.

Eleven deaths have occurred during the year, as against nine in 1874.

Two persons were killed by being crushed between trucks.

Two by falling from trams on incline planes; their riding on the trams was against the rules.

Two by getting entangled in the machinery; in both cases the machinery was properly fenced, as required by the Act.

One by falling from the pit bank on to the railway underneath.

And two men were killed by an arch falling upon them; the two deceased were engaged in taking out the centres underneath the arch. From my inspection I believe there had not been sufficient time allowed for the lime to "set" or stiffen, therefore as soon as the centres, (on which the arch was resting), were removed, it fell. I consider the two deceased showed a want of proper care in attempting to remove the centres as they did.

During the year four prosecutions were, with your permission, instituted against the owners and managers of the following collieries; viz.:—

On the 27th July, Mr. Thomas Jones, the owner, and John Williams, the manager of the Hafod Colliery, Rhondda Valley, were proceeded against for employing more than 20 men, there being only one shaft; and for not having proper means of signalling in the said shaft. The case was heard at Pontypridd Police Station, and each defendant was fined 40*s.* and costs for each offence.

The second case, which was heard at the same place, on the 27th October, was against William Williams, manager of the Tylacoch Colliery, (which colliery also belongs to Mr. Thomas Jones, already referred to,) for a violation of 1st General Rule. The defendant was fined 5*l.* and costs.

The third case heard on the 3rd November, at the same place, was against D. Rees, the manager of the Tynybedw Colliery, for not having a proper fence at the top of the shaft. The summons was dismissed with costs. (This case has already been referred to).

The fourth and last case was heard at the same place on 1st December, and was against William Thomas, manager of the Pwllgwam Colliery, for violations of the 13th and 20th sections. The defendant was fined 5*l.* and costs for each violation.

Although the actual number of lives lost during the year under consideration is seven less, yet as regards the quantity of coal raised per life lost the result is not quite so good as in 1874.

But to be able to form an opinion as to whether the fatality attending the working of our mines has or has not been reduced, we ought, I think, to go back several years. As regards

this district, I find that during the seven years ended 31st December 1862, the average number of tons of coal raised per life lost was 45,241, or 22·1 { lives lost per million tons of minerals raised.

ditto during the three years ending 31st December 1866 - - } 64,729, or 15·4 ditto.

ditto three years, ditto 1875 - 88,890, or 11·2 ditto.

The above figures show a saving of life during the three years ending 31st December 1866, as compared with the seven years ending 31st December 1862, equal to 43 per cent., or 53 lives saved each year. And if the last three years, *i.e.*, 1873, 1874, and 1875, be compared with the said seven years, the saving is equal to 95 per cent., *i.e.*, if the same death rate which prevailed in 1862 had continued the number of lives lost this year would have been 248 instead of 127, the actual number.

A fair and candid consideration of the foregoing figures cannot, I think, fail to prove, that although the loss of life in this district is still very great, it has been considerably reduced; and as it cannot, I think, be said that the mines now being worked are less dangerous than the mines worked some 15 or 20 years ago; therefore such a result is, in my opinion, fairly attributable to a better knowledge of mining being brought to bear, and more care and better discipline being exercised by all engaged.

In concluding this my Twelfth Annual Report, I would take the opportunity of impressing upon all owners and managers the great importance of maintaining all airways (and especially the principal ones) of sufficient sectional area, to ensure a good and efficient ventilation so as to keep not only all the working places but also all contiguous places free from gas. Unless this be properly attended to it matters little whether the ventilation be effected by rarefaction or by mechanical means, the result will be the same, viz., weak and defective ventilation.

Secondly, that a thorough and proper examination be made every morning before the workmen proceed to their working places; that the lamp stations be fixed at a sufficient distance from the working places, and at points where the air passing cannot be affected by the opening or neglect of doors. Only three or four weeks ago there was an explosion in this district killing two men, caused, I believe, entirely by the lamp station being placed where the ventilation was cut off through a door being neglected, the gas finding its way back to the lamp station where open lights were used, and where it was exploded by one of the deceased.

In all districts at all extensive, and worked with safety lamps, a proper and responsible person should be in attendance during working hours for the purpose of opening and relocking such safety lamps as may go out during the day. I often find that this duty is left to the fireman, who, when wanted for such a purpose, may be a long distance from the lamp station, and difficult to find by the person wanting him. This, no doubt, increases the temptation to resort to improper means for unlocking the lamps, &c., &c.

Thirdly, that in working, all the steam coals, which are well known to be fiery, on the Long Wall principle, shot-firing should be strictly prohibited.

I would also impress upon the workmen the importance of making periodical inspections (say once every month), in accordance with the 30th General Rule.

At the largest collieries in the district I am only aware of one instance, that is at the collieries belonging to Messrs. David Davis and Sons, where the workmen make regular inspections, for which Messrs. Davis pay them; and although other large companies also paid for such inspections, the workmen refuse to do so. Such conduct on the part of the colliers is much to be regretted.

I have, &c.,

THOS. E. WALES.

The Right Honourable
Richard Assheton Cross, M.P.,
Home Secretary, Whitehall, London.

Collieries in the South Wales Inspection District, 1875.

No.	Name of Colliery.	Owners.	Post Town.	County.
1	Aberdare Merthyr	Aberdare Merthyr Steam Coal Co.	Aberdare	Glamorgan.
2	Aberdare Coal Co.'s Mine	Aberdare Coal Co.	Ditto	Ditto.
3	Penclawdd	Amman Iron Co.	Penclawdd	Ditto.
4	Four Feet Level	Aberdare Rhondda Steam Coal Co.	Hirwain	Ditto.
5	Bute Pit	Ditto	Ditto	Ditto.
6	Aber	Aber Coal Co.	Bridgend	Ditto.
7	River Level	Aberdare Iron Co.	Aberdare	Ditto.
8	Park	Ditto	Ditto	Ditto.
9	No. Nine	Ditto	Ditto	Ditto.
10	Tunnel Pit	Ditto	Ditto	Ditto.
11	Blanant	Ditto	Ditto	Ditto.
12	Abergorki	Ditto	Ditto	Ditto.
13	Cwmbach	Ditto	Ditto	Ditto.
14	Aber Rhondda	Aber Rhondda Coal Co.	Pontypridd	Ditto.
15	Wenallt	Aberdulais Tin Plate Co.	Aberdulais	Ditto.
16	Penallta	Beddoe Edmund	Pontypridd	Ditto.
17	Braich y Cymmer	Barker, David	Bridgend	Ditto.
18	Birchgrove and Sisters	Birchgrove and Graigola Coal Co.	Neath	Ditto.
19	Sisters Pit	Ditto	Ditto	Ditto.
20	Dinas Isha	Begg, Hugh	Pontypridd	Ditto.
21	Braich y Cymmer, No. 2, Deep.	Barker, David	Bridgend	Ditto.
22	Birch Rock	Birch Rock Coal Co.	Pontardulais	Ditto.
23	Abergortri Pit	Bunyeat, Brown, & Co.	Pontypridd	Ditto.
24	,, Level	Ditto	Ditto	Ditto.
25	Bettws Llantwit	Bettws Llantwit Colliery Co.	Bridgend	Ditto.
26	Llantwit	Ditto	Ditto	Ditto.
27	Barrow	Barrow Hæmatite Steel Co.	Bridgend	Ditto.
28	Cold Credden	Bevan, Ditto	Loughor	Ditto.
29	Tychafach	Begg, Hugh	Pontypridd	Ditto.
30	Lletty Shenkin	Bunyeat, Brown, and Co.	Aberdare	Ditto.
31	Victoria Braich y Cymmer	Barker, D.	Bridgend	Ditto.
32	Craig-yr-allt	Booker, T. W., & Co.	Taff's Well	Ditto.
33	Llan	Ditto	Ditto	Ditto.
34	Rocks Level	Ditto	Ditto	Ditto.
35	Rhydyrhelig	Ditto	Ditto	Ditto.
36	Broadoak	Banfield, J.	Loughor	Ditto.
37	Graig	Brogden, John, & Sons	Aberdare	Ditto.
38	Merthyr Dare	Ditto	Ditto	Ditto.
39	Bwllfa	Ditto	Ditto	Ditto.
40	Cefn	Bryndû Coal & Coke Co.	Bridgend	Ditto.
41	Bryndû	Ditto	Ditto	Ditto.
42	Bishwell	Bishwell Coal Co.	Swansea	Ditto.
43	Bute Merthyr	Bute, Marquis of	Pontypridd	Ditto.
44	Dinas, No. 2 Level	Coffin & Co.	Ditto	Ditto.
45	,, Lower Pit	Ditto	Ditto	Ditto.
46	,, Abergorki Mine	Ditto	Ditto	Ditto.
47	,, No. 3 Level	Ditto	Ditto	Ditto.
48	,, Middle Pit	Ditto	Ditto	Ditto.
49	Coedcae	Coedcae Coal Co.	Ditto	Ditto.
50	Ynysfeio	Cope & Co.	Ditto	Ditto.
51	Pentre	Cardiff & Swansea Steam Coal Co.	Ditto	Ditto.
52	Corrwg Techon	Corrwg Techon Colliery Co.	Maesteg	Ditto.
53	Cwmaman	Cwmaman Coal Co.	Aberdare	Ditto.
54	Cwm Clydach	Cwm Clydach Coal Co.	Pontypridd	Ditto.
55	Mansel	Cwmfelin Tin Plate Co.	Swansea	Ditto.
56	Cwmbach	Cwmbach Coal Co.	Ditto	Ditto.
57	Bryn	Cwmavon Copper Co.	Aberavon	Ditto.
58	Oakwood	Ditto	Ditto	Ditto.
59	Cwmavon	Ditto	Ditto	Ditto.
60	Resolven	Cardiff & Swansea Steam Coal Co.	Resolven	Ditto.
61	Tan Black Rock	Crosslett, C.	Pontypridd	Ditto.
62	Tophill	Cartwright, W. G.	Quaker's Yard	Ditto.

Collieries in the South Wales Inspection District—*continued.*

No.	Name of Colliery.	Owners.	Post Town.	County.
63	Cyfarthfa Cethin, No. 1	Crawshay, R. T.	Merthyr Tydfil	Glamorgan.
64	,, ,, No. 2	Ditto	Ditto	Ditto.
65	,, Castle Pit	Ditto	Ditto	Ditto.
66	,, Cwm Pit	Ditto	Ditto	Ditto.
67	,, Clay Level	Ditto	Ditto	Ditto.
68	,, Ironstone Mines	Ditto	Ditto	Ditto.
69	,, Upper ditto	Ditto	Ditto	Ditto.
70	Nelson	Cartwright, W. G.	Pontypridd	Ditto.
71	Cwmclich	Cwmclich Coal Co.	Swansea	Ditto.
72	Cefn Merthyr	Cefn Coal Co.	Hirwain	Ditto.
73	Abercwmboy	Davies, D., & Sons	Aberdare	Ditto.
74	Blaengwawr	Ditto	Ditto	Ditto.
75	Ferndale, No. 1.	Ditto	Pontypridd	Ditto.
76	,, No. 2.	Ditto	Ditto	Ditto.
77	Bodringallt Pit	Ditto	Ditto	Ditto.
78	,, Level	Ditto	Ditto	Ditto.
79	Graig	Daniel, Edward R., & Co.	Swansea	Ditto.
80	Pendarron, No. 1	Dowlais Iron Co.	Dowlais	Ditto.
81	,, No. 2	Ditto	Ditto	Ditto.
82	Vochriw, No. 1	Ditto	Ditto	Ditto.
83	,, No.2	Ditto	Ditto	Ditto.
84	North Tunnel	Ditto	Ditto	Ditto.
85	South Tunnel	Ditto	Ditto	Ditto.
86	Bargoed, Upper, 4 Feet	Ditto	Ditto	Ditto.
87	,, Big Coal Pit	Ditto	Ditto	Ditto.
88	Buxton's Pit	Ditto	Ditto	Ditto.
89	Pantywain 4 Feet Pit	Ditto	Ditto	Ditto.
90	Bedling	Ditto	Ditto	Ditto.
91	Black Vein Drift	Ditto	Ditto	Ditto.
92	Collie Levels	Ditto	Ditto	Ditto.
93	Dowlais and Pendarran	Ditto	Ditto	Ditto.
94	Gellyfelog	Davies, David	Merthyr Tydfil	Ditto.
95	Dinas Main, No. 3 Seam	Dinas Main Coal & Coke Co.	Llantrissant	Ditto.
96	,, No. 2 ditto	Ditto	Ditto	Ditto.
97	Cwmdu	Dynevor, Duffryn, and Neath Abbey United Collieries Co.	Neath	Ditto.
98	Brithdir	Ditto	Ditto	Ditto.
99	New Dynevor	Ditto	Ditto	Ditto.
100	Brynderry Level	Ditto	Ditto	Ditto.
101	Main	Ditto	Ditto	Ditto.
102	Fire Engine	Ditto	Ditto	Ditto.
103	Tyr Edmund	Ditto	Ditto	Ditto.
104	Ocean Park Pits	Davies, D., & Co.	Pontypridd	Ditto.
105	,, Maindy	Ditto	Ditto	Ditto.
106	,, Dare	Ditto	Ditto	Ditto.
107	,, Edwards	Ditto	Ditto	Ditto.
108	Maesteg Merthyr	Davis, William	Bridgend	Ditto.
109	Cefn Cribbor	Evans, William.		
110	Cadoxton	Evans and Bevan	Neath	Ditto.
111	No. 1 Level	Ditto	Ditto	Ditto.
112	Trecynow	Ditto	Ditto	Ditto.
113	Cwmdu	Ditto	Ditto	Ditto.
114	Brynteg	Ditto	Ditto	Ditto.
115	Seven Sisters	Ditto	Ditto	Ditto.
116	Fowler's Pontypridd	Fowler's Pontypridd Steam Coal Co.	Pontypridd	Ditto.
117	Tyr Issa	Foxhole Coal Co.	Swansea	Ditto.
118	Park Pit	Ditto	Ditto	Ditto.
119	Fernhill	Fernhill Colliery Co.	Pontypridd	Ditto.
120	Swan and Park	Grenfell & Son	Briton Ferry	Ditto.
121	Copper Pit	Glasbrook, John	Swansea	Ditto.
122	Cwm	Ditto	Ditto	Ditto.
123	Tyrcenol	Ditto	Ditto	Ditto.
124	Plasmarl	Ditto	Ditto	Ditto.
125	Graigola	Graigola Merthyr Coal Co.	Glais	Ditto.
126	Graig Merthyr	Ditto	Cwm Clydach	Ditto.
127	Ponthygleison	Griffiths, R. T.	Merthyr Tydfil	Ditto.
128	Glyncorrwg	Glyncorrwg Coal Co.	Briton Ferry	Ditto.
129	Slest	Ditto	Ditto	Ditto.
130	Grovesend	Grovesend Coal Co.	Pontardulais	

Collieries in the South Wales Inspection District—*continued.*

No.	Name of Colliery.	Owners.	Post Town.	County.
131	Graig	Graig Coal Co.	Merthyr Tydfil	Glamorgan.
132	Great Western	Great Western Colliery Co.	Pontypridd	Ditto.
133	Gadlys	Gadlys Coal and Iron Co.	Aberdare	Ditto.
134	Cilely	Great Western Railway Co.	Llantrissant	Ditto.
135	Abercrave	Glasbrook, Thomas, & Sons	Neath	Ditto.
136	Forest	Glasbrook, J., & Co.	Swansea	Ditto.
137	Beaufort	Ditto	Ditto	Ditto.
138	Gilfach Goch, No. 1 Level	Glamorgan Coal Co.	Pontypridd	Ditto.
139	„ No. 1 Drift	Ditto	Ditto	Ditto.
140	„ No. 1 Pit	Ditto	Ditto	Ditto.
141	Penrhiwfer Pit	Ditto	Ditto	Ditto.
142	„ Level	Ditto	Ditto	Ditto.
143	„ Steam Coal Pit	Ditto	Ditto	Ditto.
144	Llwynpia, No. 3 Pit	Ditto	Ditto	Ditto.
145	„ Steam Coal Pit	Ditto	Ditto	Ditto.
146	Hill's Mine	Hill and Nicholas	Clydach	Ditto.
147	Brynmawr	Harry, Thomas	Gower Road	Ditto.
148	Harris's Navigation	Harris's Navigation Steam Coal Co.	Quakers Yard	Ditto.
149	Weig	Hopkins, Thomas	Swansea	Ditto.
150	Werfa	Heath, Evens, & Co.	Aberdare	Ditto.
151	Glynvoch	Insole & Co	Pontypridd	Ditto.
152	Cymmer	Ditto	Ditto	Ditto.
153	Tylacoch	Jones, T.	Ditto	Ditto.
154	Hafod	Ditto	Ditto	Ditto.
155	New Cymmer	Joseph, D.	Ditto	Ditto.
156	Nantymelin	Jones, Mordecai	Aberdare	Ditto.
157	J. Jones' Colliery	Jones, John	Pennygraig	Ditto.
158	Emily	Jones and Saunders	Swansea	Ditto.
159	Round Pit	Ditto	Ditto	Ditto.
160	Ynishir	Jones, T.	Pontypridd	Ditto.
161	Bedlwyn	Kenway	Aberdare	Ditto.
162	Cefn Gola	Kenway and Pearse	Gower Road	Ditto.
163	Mynyddbachyglo	Landore Tin Plate Co.	Swansea	Ditto.
164	Llwyncelyn	Llwyncelyn Coal Co.	Pontypridd	Ditto.
165	Aberdulais	Luke, T.	Neath	Ditto.
166	Tymelyn	Lovell, Thos.	Taff's Well	Ditto.
167	Danygraig	Lambert, Charles	Swansea	Ditto.
168	Crumlin	Ditto	Ditto	Ditto.
169	Duffryn Pit	Llynvi, Tondû, and Ogmore Coal and Iron Co.	Bridgend	Ditto.
170	Garawen	Ditto	Ditto	Ditto.
171	Tywith	Ditto	Ditto	Ditto.
172	Garth	Ditto	Ditto	Ditto.
173	Maesteg Deep	Ditto	Ditto	Ditto.
174	Tynenewydd	Ditto	Ditto	Ditto.
175	Cwmdu	Ditto	Ditto	Ditto.
176	No. 9 Maesteg	Ditto	Ditto	Ditto.
177	No 11 Tygwynbach	Ditto	Ditto	Ditto.
178	Caidu	Ditto	Ditto	Ditto.
179	Wyndham	Ditto	Ditto	Ditto.
180	Park Slip	Ditto	Ditto	Ditto.
181	North Dunraven	London and South Wales Steam Coal Co.	Pontypridd	Ditto.
182	South	Ditto	Ditto	Ditto.
183	Graig Level	Ditto	Ditto	Ditto.
184	Gwern	Llansamlet Coal Co.	Neath	Ditto.
185	North Llantwit	Llantwit Coal Co.	Pontypridd	Ditto.
186	Idd	Ditto	Ditto	Ditto.
187	Llynvi Valley	Llynvi Valley Coal Co.	Bridgend	Ditto.
188	Llantwit Wallsend	Llantwit Wallsend Coal Co.	Llantrissant	Ditto.
189	Llanelay	Loftus Iron Co.	Ditto	Ditto.
190	Bentrewydd	Lewis, William	Quakers Yard	Ditto.
191	Llanmorlais	Llanmorlais Coal Co.	Penclawdd	Ditto.
192	Bryn Coch	Morgan, David	Cardiff	Ditto.
193	Pond Level	Ditto	Ditto	Ditto.
194	Cwm Level	Morgans, William	Morriston	Ditto.
195	Bwrrlas	Morris, H. L.	Penclawdd	Ditto.
196	Tagelyn	Masters, W. W.	Swansea	Ditto.

Collieries in the South Wales Inspection District—*continued.*

No.	Name of Colliery.	Owners.	Post Town.	County.
197	Tewgoed	Margam Tin Plate Co.	Taibach	Glamorgan.
198	Western Merthyr	Nixon and Bell	Swansea	Ditto.
199	New Forest	New Forest Coal Co.	Neath	Ditto.
200	Newbridge Rhondda	Newbridge Rhondda Coal Co.	Pontypridd	Ditto.
201	Navigation	Nixon, Taylor, & Co.	Mountain Ash	Ditto.
202	Deep Duffryn	Ditto	Ditto	Ditto.
203	Forest Level	Ditto	Ditto	Ditto.
204	Merthyr Vale	Ditto	Ditto	Ditto.
205	Neath Merthyr	Neath Merthyr Coal Co.	Resolven	Ditto.
206	Primrose	Primrose Coal Co.	Pontardawe	Ditto.
207	Cwmnant	Ditto	Ditto	Ditto.
208	Waincoed	Ditto	Ditto	Ditto.
209	Wernddu	Ditto	Ditto	Ditto.
210	Torgmgngdd	Phillips, D.	Briton Ferry	Ditto.
211	Abergwawr	Powell Duffryn Steam Coal Co.	Aberdare	Ditto.
212	Tforchneol	Ditto	Ditto	Ditto.
213	Cwmdare	Ditto	Ditto	Ditto.
214	Lower Duffryn	Ditto	Ditto	Ditto.
215	Aberaman	Ditto	Ditto	Ditto.
216	Cwm Neol	Ditto	Ditto	Ditto.
217	Graig Level	Ditto	Ditto	Ditto.
218	High Duffryn	Ditto	Ditto	Ditto.
219	Old Duffryn	Ditto	Ditto	Ditto.
220	Middle Duffryn	Ditto	Ditto	Ditto.
221	Lower Duffryn Upper Pit	Ditto	Ditto	Ditto.
222	Penygraig No. 2 Level	Penygraig Coal Co.	Dinas	Ditto.
223	„ Drift and Pit	Ditto	Ditto	Ditto.
224	Cross Levels	Plymouth Iron Co.	Merthyr Tydfil	Ditto.
225	Graig	Ditto	Ditto	Ditto.
226	Taibach	Ditto	Ditto	Ditto.
227	No. 1 South Duffryn	Ditto	Ditto	Ditto.
228	No. 2 South Pit	Ditto	Ditto	Ditto.
229	Penyard Level	Ditto	Ditto	Ditto.
230	Clynmil, No. 1	Ditto	Ditto	Ditto.
231	„ No. 2	Ditto	Ditto	Ditto.
232	Original	Ditto	Ditto	Ditto.
233	Wain Level	Ditto	Ditto	Ditto.
234	Llancaiach	Powell's Gellygaer Coal Co.	Quakers Yard	Ditto.
235	Gellygaer	Ditto	Ditto	Ditto.
236	Lower Resolven	Pickerell, William	Neath	Ditto.
237	Avon Vale	Palmer & Co.	Briton Ferry	Ditto.
238	Penrhiwceiber	Penrhiwceiber Coal Co.	Mountain Ash	Ditto.
239	Llantwit Red Ash	Powell's Llantwit Co.	Llantrissant	Ditto.
240	Cribbwr	Rees, William	Bridgend	Ditto.
241	Rhondda Merthyr	Rhondda Merthyr Coal Co.	Pontypridd	Ditto.
242	„ Abergorki	Ditto	Ditto	Ditto.
243	Park Pit	Ditto	Hirwain	Ditto.
244	Rhondda Mountain	Rhondda Mountain Coal Co.	Glyn Neath	Ditto.
245	Peurhiew	Rees, P.	Hirwain	Ditto.
246	Gellyhir	Richards, John	Swansea	Ditto.
247	Gellyseron	Rees, William	Bridgend	Ditto.
248	„ Level	Ditto	Ditto	Ditto.
249	New Forest	Reynolds, M., & Co.	Neath	Ditto.
250	Tforchamman	Rees, Rees	Aberdare	Ditto.
251	Llanharran	Richards, Power, & Co.	Llantrissant	Ditto.
252	Beaufort	Richards, P.	Swansea	Ditto.
253	Rhydydefed	Ditto	Ditto	Ditto.
254	Worcester	Siemens' Landore Steel Co.	Swansea	Ditto.
255	Weyfach	Ditto	Ditto	Ditto.
256	Wain	Salwey, E. R.	Loughor	Ditto.
257	Gorwydd	Sterry, Alfred	Gower Road	Ditto.
258	Mountain	Ditto	Ditto	Ditto.
259	Bryn Mawr	Thomas, William	Ditto	Ditto.
260	Pwllgwaim	Thomas, D.	Pontypridd	Ditto.
261	Blaenclydach	Treforest Steel Co.	Ditto	Ditto.
262	Typica	Typica Colliery Co.	Ditto	Ditto.

Collieries in the South Wales Inspection District—*continued.*

No.	Name of Colliery.	Owners.	Post Town.	County.
263	Clydach Vale	Thomas, Richards, & Co.	Pontypridd	Glamorgan.
264	Synborwen	Thomas, S.	Aberdare	Ditto.
265	Tyr Glandwr	Tyr Glandwr Coal Co.	Swansea	Ditto.
266	Penclwynnarch	Ditto	Ditto	Ditto.
267	Vorglart	Ditto	Ditto	Ditto.
268	South Level	Tower Graig Coal Co.	Hirwain	Ditto.
269	Tower Graig	Ditto	Ditto	Ditto.
270	Gelli	Thomas and Griffiths	Pontypridd	Ditto.
271	Old Brithwenydd	Thomas, D.	Dinas	Ditto.
272	Upgabor	Thomas, Benj.	Llandebie	Ditto.
273	St. Llanharran	Trimsaran Coal & Iron Co.	Llantrissant	Ditto.
274	Tynwydd	Troedyrhiw Coal Co.	Pontypridd	Ditto.
275	Ynysfeio	Ditto	Ditto	Ditto.
276	Morfa	Vivian & Sons	Taibach	Ditto.
277	Goitre	Ditto	Ditto	Ditto.
278	Bwmbil	Ditto	Ditto	Ditto.
279	Cathelid	Ditto	Clydach	Ditto.
280	Pentrefelin	Ditto	Swansea	Ditto.
281	Pentre	Ditto	Ditto	Ditto.
282	Mynydd Newydd	Ditto	Ditto	Ditto.
283	Brynwillach	Vivian, H. H., M.P.	Ditto	Ditto.
284	Aberpergwm	Williams	Glyn Neath	Ditto.
285	Trealaw	Ditto	Pontypridd	Ditto.
286	Nantgarw Llantwit	Williams, Wm., and Co.	Ditto	Ditto.
287	West Swansea	West Swansea Coal Co.	Swansea	Ditto.
288	Rica Llantwit	Williams, Evan	Llantrissant	Ditto.
289	Clyne	Welsh Steam Coal Collieries Co.	Swansea	Ditto.
290	Cwmnantddhu	White, John, & Co.	Swansea Valley	Ditto.
291	Ynispenllwch	Ynyspenllwch Coal Co.	Clydach	Ditto.
292	Caergynydd	Ystalyfera Iron Co.	Swansea	Ditto.
293	Brass Vein Drift	Ditto	Ystalyfera	Ditto.
294	Gwaclawdd	Ditto	Ystradgynlais	Ditto.
295	Gilwen	Ditto	Ystalyfera	Ditto.
296	Feeder Drift	Ditto	Ditto	Ditto.
297	Cyfyn	Ditto	Ditto	Ditto.
298	Brynmenin Clay Level	Ynisawdre Coal Co.	Bridgend	Ditto.
299	Ynisawdre	Ditto	Ditto	Ditto.

COLLIERIES.

1	Amman	Amman Iron Co.	Brynamman, R.S.O.	Carmarthen.
2	Gorsgoch	Carmarthenshire Coal and Iron Co.	Cross Inn, R.S.O.	Ditto.
3	Rhos, No. 1	Ditto	Ditto	Ditto.
4	„ No. 2	Ditto	Ditto	Ditto.
5	Cawdor	Cawdor Coal Co.	Llanelly	Ditto.
6	Carnarvon	Carnarvon Coal Co.	Ditto	Ditto.
7	Carway	Carway Coal Co.	Kidwelly	Ditto.
8	Hendre	Davies, D.	Llandilo	Ditto.
9	Gwain-cae-gurwen	Gwain-cae-gurwen Coal Co.	Llanelly	Ditto.
10	Garnant	Garnant Coal Co.	Ditto	Ditto.
11	Gors-y-Garnant	Ditto	Ditto	Ditto.
12	Pentremawr	Harries, T., & Co.	Pontyberem	Ditto.
13	Capel Ifan	Ditto	Ditto	Ditto.
14	Dynant	Harris, D., & Co.	Llanelly	Ditto.
15	Velinfach	Harries, J.	Ditto	Ditto.
16	Hendreforgan	Hendreforgan Coal Co.	Ystalyfera	Ditto.
17	Cwmclynfell	James and Aubrey	Ditto	Ditto.
18	Cwmmawr	Jones, D.	Llanelly	Ditto.
19	Tyrglos	Isaac, D.	Ditto	Ditto.
20	Llwynrhidia	Jones, E.	Cwmaman, R.S.O.	Ditto.
21	Frood	Kidwelly Tin Plate Co.	Kidwelly	Ditto.
22	St. David's	Llangennech Coal Co.	Llanelly	Ditto.
23	Llangennech	Ditto	Ditto	Ditto.
24	Glynmarch	Lloyd, D., & Co., Limited	Cross Inn, R.S.O.	Ditto.
25	Park	Ditto	Ditto	Ditto.
26	Blaynea	Ditto	Llandebie	Ditto.
27	Middle Amman	Middle Amman Coal Co.	Cwmaman, R.S.O.	Ditto.
28	Pool	Mason & Elkington	Burry Port, R.S.O.	Ditto.
29	Capel Ifan	Ditto	Ditto	Ditto.
30	Cross Hands	Norton & Co.	Cross Hands, R.S.O.	Ditto.
31	Victoria	Ditto	Ditto	Ditto.
32	Pencoed	Nevill & Druce	Llanelly	Ditto.

Collieries in the South Wales Inspection District—*continued.*

No.	Name of Colliery.	Owners.	Post Town.	County.
33	Glynea	Nevill & Druce	Llanelly	Carmarthen.
34	Bryngwyn	Ditto	Ditto	Ditto.
35	St. George's	Ditto	Ditto	Ditto.
36	Old Castle	Ditto	Ditto	Ditto.
37	Cae	Ditto	Ditto	Ditto.
38	Pontyclerc	Pontyclerc Coal Co.	Cross Inn, R.S.O.	Ditto.
39	Busley	Protheroe & Co.	Llanelly	Ditto.
40	Cabael	Ditto	Ditto	Ditto.
41	Rhydwain	Rhydwain Coal Co.	Ditto	Ditto.
42	Raven	Raven Coal Co.	Brynaman, R.S.O.	Ditto.
43	Rhosaman	Rhosaman Coal Co.	Cwmaman, R.S.O.	Ditto.
44	Tyrceol	Richards	Llanelly	Ditto.
45	Plas Marl	Roberts & Evans	Kidwelly	Ditto.
46	Alltwen	Thomas, J., & Co.	Llanelly	Ditto.
47	Trimsaran	Trimsaran Coal & Iron Co.	Kidwelly	Ditto.
48	Tregob	Tregob Coal Co.	Llanelly	Ditto.
49	Beggan	Ditto	Ditto	Ditto.
50	Llanerch	Thomas, D.	Ditto	Ditto.
51	Pump Quart	Thompson, A.	Ditto	Ditto.
52	New Lodge	Ditto	Ditto	Ditto.
53	Gwendraetto	Ditto	Ditto	Ditto.
54	Tyllwydd	Thomas, D.	Cwmaman, R.S.O.	Ditto.
55	Brynvillor	Thomas, R.	Ditto	Ditto.
56	Craiglow	Evans, W.	Burry Port, R.S.O.	Ditto.
57	Glyngerwen	Walters, T.	Llanelly	Ditto.
58	Talsarney	Williams, T.	Ditto	Ditto.
59	Maesardofen	Ditto	Ditto	Ditto.
60	Ystradgynlais	Ystradgynlais Coal Co.	Swansea Valley	Ditto.
61	Ynysgeinon	Ynysgeinon Coal Co.	Ystalyfera	Ditto.
1	South Wood	Canton, David	Haverfordwest	Pembroke.
2	Woodland	Ditto	Ditto	Ditto.
3	Hook	Powell	Ditto	Ditto.
4	Shipping	Saundersfoot and Tenby Coal Co. (Limited).	Saundersfoot, R.S.O.	Ditto.
5	Moreton	Ditto	Ditto	Ditto.
6	Bouville's Court	Vickerman & Co. (Limited)	Ditto	Ditto.
7	Grove	Ditto	Ditto	Ditto.
1	Maesyr Marchog	Maesyr Marchog Coal Co.	Onllwyn	Brecon.
2	Onllwyn	Onllwyn Coal Co.	Ditto	Ditto.
3	Hendreladis	Yniscedwyn Coal and Iron Co. (Limited).	Swansea	Ditto.
4	Balance Pit	Ditto	Ditto	Ditto.
5	Old Pit	Ditto	Ditto	Ditto.
6	White Vein Level	Ditto	Ditto	Ditto.
7	Cwmphill	Ditto	Ditto	Ditto.

METALLIFEROUS MINES.

SIR,

I HAVE the honour to report that the number of mines at work during the year ending December 31st, 1875 was eight; and that 408 persons were engaged underground, and 164 on the surface, making a total of 572 persons employed.

	Tons.	cwts.	qrs.
In Pembrokeshire, of Silver Lead Ore, were raised -	120	12	0
Ditto in Carmarthenshire - - - -	462	0	0
Glamorganshire, Iron Ore, were raised - -	102,533	4	0
Ditto, Yellow Ochre - - - -	159	9	0

During the year three fatal accidents occurred, resulting in the loss of three lives.

The first occurred on the 4th January, in the Mynydy Mine, near Llantrissant, and was caused by a fall of roof.

The second, at the Bute Mine, near Llantrissant, the deceased fell from the cage or carriage whilst ascending the shaft; and the last, which occurred on the 3rd June, was also at the Mynydy Mine, and it too was caused by a fall of roof.

I have, &c.,

The Right Honble. R. A. Cross, M.P., THOS. E. WALES.
Home Secretary,
Whitehall, London.

METALLIFEROUS MINES.

No.	Name of Metalliferous Mine.	Owners.	Post Town.	County.
1	Garth - - -	Messrs. T. W. & Co., Limited	Cardiff - -	Glamorgan.
2	Llanharry - -	Trimsaran Coal and Iron Co., Limited.	Llantrissant -	Ditto.
3	Bute - - -	Dowlais Iron Co. -	Ditto - -	Ditto.
4	Myndy - - -	Myndy Iron Ore Co. -	Ditto - -	Ditto.
5	Llanfymach - -	Roberts, J. - -	Whitland, R.S.O. -	Pembroke.
6	East Nant-y-Mwyn -	East Nant-y-Mwyn Silver Lead Mining Co.	Abergwissen, Brecon-shire.	Carmarthen.
7	Nant-y-Mwyn - -	Nant-y-Mwyn Silver Lead Mining Co.	Llandovery - -	Ditto.
8	Castle Rock - -	Castle Rock Silver Lead Mining Co.	Llanwrtyd, Brecon-shire.	Ditto.

LIST of the FATAL COLLIERY ACCIDENTS in the SOUTH WALES DISTRICT during the year ended 31st December, 1875.

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1875.																	
Jan. 4	1	Merthyr Dare	Aberdare	J. Brogden and Sons	Benj. Edwards	Labourer	58	Killed by trucks	–	–	–	–	–	–	–	1	–
„ 11	2	Llan Darran-ddu	Pontypridd	Llan Darram-ddu Coal Co.	David Thomas	Collier	17	Killed by fall of roof	–	–	1	–	–	–	–	–	–
„ 15	3	Bonville's Court	Saundersfoot	Bonville's Court Coal and Iron Co.	James Edwards	Collier	24	Killed by fall of roof	–	–	1	–	–	–	–	–	–
„ 16	4	Ystalyfera	Swansea Valley	Ystalyfera Iron Co.	Henry Evans	Collier	28	Killed on engine plane	–	–	–	–	–	1	–	–	–
„ 25	5	Ocean	Ogmore Valley	David Davies and Co.	George Davies	Sinker	—	Killed by stone falling from side of shaft.	–	–	–	–	1	–	–	–	–
„ 28	6	Newbridge Rhondda.	Pontypridd	Newbridge Rhondda Colliery Co.	Thos. Llewellyn	Collier	35	Killed by a fall of coal	–	1	–	–	–	–	–	–	–
Feb. 3	7	Wyndham	Ogmore Valley	Tondu and Ogmore Coal and Iron Co.	Thos. Williams	Pit Carpenter.	—	Killed by an explosion of gas	1	–	–	–	–	–	–	–	–
„ 13	8	Woodbridge	Pontyeats	Woodbridge Coal Co.	Ada Davies	Not occupied.	—	Killed by getting entangled with the machinery which was properly fenced.	–	–	–	–	–	–	1	–	–
„ 13	9	Fernhill	Pontypridd	R. Southern	Miles Spickett	Labourer	27	Killed by trucks	–	–	–	–	–	–	–	1	–
„ 15	10	Westernmoor	Neath	Edward Evans	Thos. Lloyd	Collier	15	Killed by a fall of roof	–	–	1	–	–	–	–	–	–
„ 18	11	Maesteg	Bridgend	Llynvi, Tondû, and Ogmore Coal and Iron Co.	Wm. Harry	Collier	—	Killed by fall of roof	–	–	1	–	–	–	–	–	–
„ 25	12	Weigfach	Swansea	Landore Siemens Steel Co.	Wm. Evans	Collier	19	Killed by a fall of coal	–	1	–	–	–	–	–	–	–
„ 27	13	Parkslip	Bridgend	Llynvi, Tondû, and Ogmore Coal and Iron Co.	Thos. David	Collier	23	Killed by a fall of coal	–	1	–	–	–	–	–	–	–
Mar. 8	14	Gorsgoch	Cross Inn	Carmarthenshire Anthracite Coal Co.		Fireman	26	Suffocated by going into gas	–	–	–	1	–	–	–	–	–
„ 11	15	Bryngwyn	Llanelly	Nevill and Druce	H. Williams	Collier	18	Killed by fall of stone	–	–	1	–	–	–	–	–	–
„ 13	16	Lower Weig	Swansea	United Bituminous Collieries Co.		Labourer	—	Killed by tram falling on him whilst engaged in tipping rubbish.	–	–	–	–	–	–	–	1	–
„ 16	17	Gilwen	Ystalyfera	Ystalyfera Iron Co.	John Griffiths	Collier	16	Killed by fall of coal	–	1	–	–	–	–	–	–	–
„ 17	18	Cae	Llanelly	Nevill and Druce	Wm. Morgan	Sinker	40	Killed by small stone falling from side of shaft.	–	–	–	–	1	–	–	–	–

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1875.																	
Mar. 19	19	Penrhiwceiber	Mountain Ash	Penrhiwceiber Navigation Coal Co.	Thos. Hicks	Sinker	29	Killed by falling off scaffold in sinking shaft. Deceased is supposed to have taken a fit.	—	—	—	—	1	—	—	—	—
„ 20	20	Lletty Shenkin	Aberdare	Lletty Shenkin Coal Co.	Evan Jones	Collier	63	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 2	21	Pendyris	Pontypridd	H. Kirkhouse	James Dunston	Sinker	18	Killed by falling off bucket whilst ascending sinking shaft.	—	—	—	—	1	—	—	—	—
„ 30	22	Gadlys	Aberdare	Gadlys Iron Co.	Thos. Thomas	Labourer	16	Killed by trams on engine plane	—	—	—	—	—	1	—	—	—
„ 30	23	Abergorki	Pontypridd	Lletty Shenkin Coal Co.	George Harding	Hitcher	37	Killed by stone falling down shaft	—	—	—	—	1	—	—	—	—
„ 31	24	Ynismedu	Pontardawe	Swansea Valley Steam Coal Co.	David James	Collier	24	Killed by fall of stone	—	—	1	—	—	—	—	—	—
Apr. 7	25	Gadlys	Aberdare	Gadlys Coal and Iron Co.	David Richards	Collier	34	Killed by a fall of roof	—	—	1	—	—	—	—	—	—
„ 18	26	Llety Shenkin	Aberdare	Burnyeat, Brown, and Co.	Wm. James	Labourer	27	Killed on incline	—	—	—	—	—	—	—	1	—
„ 18	27	Pendyris	Ferndale	Pendyris Coal Co.	David Owen	Sinker	36	Killed by falling down shaft while ascending.	—	—	—	—	1	—	—	—	—
„ 30	28	Wernddu	Pontardawe	Primrose Coal Co.	Thos. W. Gibbs	Collier	35	Killed by falling off tram whilst riding down the incline, which was against rules.	—	—	—	—	—	—	—	1	—
„ 30	29	Llantrissant Red Ash.	Llantrissant	Llantrissant Red Ash Coal Co.	Ebenezer Davies	Collier	69	Killed by falling from tram whilst ascending sinking shaft.	—	—	—	—	1	—	—	—	—
May 2	30	Penrhiwceiber	Mountain Ash	Penrhiwceiber Navigation Coal Co.	John Evans	Sinker	38	Killed by falling off stage in sinking shaft.	—	—	—	—	1	—	—	—	—
„ 4	31	Forch Neol	Aberdare	Rees Bevan	Morgan Jones	Collier	—	Killed by fall of roof	—	—	1	—	—	—	—	—	—
„ 6	32	Cwmaman	Aberdare	Cwmaman Coal Co.	Evan Rees	Master Haulier.	38	Killed whilst attempting to get on to a train in motion on engine plane.	—	—	—	—	—	1	—	—	—
„ 8	33	Kille	Llanelly	C. W. M. Lewis	Simon James	Collier	43	Killed by shot going off whilst engaged in unramming a hole which had missed fire. His doing so was a violation of No. 8 General Rule.	—	—	—	—	—	1	—	—	—

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1875.																	
May 8	34	Graig	Aberdare	Gadlys Coal and Iron Co.	Daniel Jones	Collier	28	Killed by fall of coal	—	1	—	—	—	—	—	—	—
„ 10	35	Onllwyn	Neath	A. H. Parsons	John Morgan	Collier	—	Killed by fall of coal	—	1	—	—	—	—	—	—	—
„ 25	36	Penclawdd	Swansea	Amman Iron Co.	Enoch Davies	Collier	—	Killed by fall of stone	—	—	1	—	—	—	—	—	—
June 8	37	Penrhiwfer	Pontypridd	Glamorgan Coal Co.	Lewis Davies	Collier	—	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 14	38	Blaen Rhos	Dowlais	Dowlais Iron Co.	J. Edwards	Collier	28	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 15	39	Dinas	Pontypridd	Coffin and Co.	T. H. Thomas	Collier	28	Killed by trams	—	—	—	—	—	1	—	—	—
„ 18	40	Maindy	Pontypridd	Ocean Steam Coal Co.	D. Adams	Collier	—	Killed by fall of roof	—	—	1	—	—	—	—	—	—
„ 18	41	Abergorki	Pontypridd	Lletty Shenkin Coal Co.	W. Pediford	Haulier	20	Killed by trams	—	—	—	—	—	1	—	—	—
„ 23	42	Maesteg	Maesteg	Llynvi Coal and Iron Co.	D. Richards	Collier	—	Killed by fall of coal	—	1	—	—	—	—	—	—	—
„ 25	43	Rhondda Merthyr	Pontypridd	Rhondda Merthyr Coal Co.	John Davies	Flueman	50	Killed by falling down shaft	—	—	—	—	1	—	—	—	—
July 1	44	Dowlais	Dowlais	Dowlais Iron Co.	J. Thomas	Collier	26	Killed in shaft	—	—	—	—	1	—	—	—	—
„ 5	45	Great Western	Pontypridd	Great Western Coal Co.	J. Prosser	Fireman	34	Killed by fall of stone	—	—	2	—	—	—	—	—	—
					B. J. Williams	Repairer	40										
„ 7	46	Abernant	Aberdare	Aberdare Coal Co.	D. Riggs	Collier	14	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 7	47	Ton-yr-efail	Pontypridd	H. Begg	T. Jones	Sinker	50	Killed by falling down shaft	—	—	—	—	1	—	—	—	—
„ 9	48	Rhydydefed	Swansea	P. Richard	—	Collier	—	Killed by trams	—	—	—	—	—	1	—	—	—
„ 12	49	Cyfarthfa	Merthyr Tydvil	R. T. Crawshay	E. Jones	Collier	27	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 13	50	Ton-yr-efail	Pontypridd	H. Begg	H. Davies	Sinker	23	Killed by trolley falling down shaft upon them.	—	—	—	—	2	—	—	—	—
					J. Morgan	Sinker	25										
„ 14	51	Navigation	Aberdare	Nixon and Taylor	W. Davis	Collier	28	Killed by fall of coal	—	1	—	—	—	—	—	—	—
„ 15	52	Cwmdare	Aberdare	Powell Duffryn Steam Coal Co.	E. Wakefield	Collier	—	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 17	53	Lletty Shenkin	Aberdare	Lletty Shenkin Coal Co.	J. Lloyd	Collier	56	Killed by fall of stone	—	—	1	—	—	—	—	—	—
„ 22	54	Gin Pit	Maesteg	Llynvi Coal and Iron Co.	W. Jones	Haulier	16	Killed by trams	—	—	—	—	—	1	—	—	—
„ 26	55	Pump Quart	Kidwelly	A. Thompson	T. Bartlett	Collier	19	Killed by falling down shaft	—	—	—	—	1	—	—	—	—
„ 29	56	Seven Sisters	Neath	Evans and Bevan	E. Morris	Sinker	30	Killed by falling down shaft	—	—	—	—	1	—	—	—	—
„ 30	57	Blaenclydach	Pontypridd	Treforest Steel and Iron Co.	W. Thomas	Haulier	18	Killed by trams	—	—	—	—	—	1	—	—	—

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1875.																	
Aug. 16	58	Dinas - -	Pontypridd -	Coffin and Co. - -	John Lewis -	Haulier -	—	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 18	59	Tynybedwr -	Pontypridd -	Thomas and Griffiths -	Matthew Gudge	Lander -	45	Killed by falling down shaft -	–	–	–	–	1	–	–	–	–
„ 26	60	Baglan -	Briton Ferry -	Glenfell and Sons -	James Hill -	Collier -	—	Killed by fall of stone - -	–	–	1	–	–	–	–	–	–
„ 26	61	Gelligaer -	Pontypridd -	Gelligaer Coal Co. -	Y. Richards -	Collier -	19	Killed by fall of coal - -	–	1	–	–	–	–	–	–	–
„ 31	62	Maesteg -	Bridgend -	Llynvi, Tondû, and Ogmore Coal and Iron Co. -	A. Bowden -	Collier -	49	Killed by fall of roof - -	–	–	3	–	–	–	–	–	–
					J. Bowden -	Collier -	17										
					H. Penglass -	Collier -	18										
Sep. 1	63	Brynmawr -	Gower Road -	Thos. Harry - -	J. Hughes -	Labourer	13	Killed by trams on engine plane -	–	–	–	–	–	1	–	–	–
„ 6	64	Bryndu -	Bridgend -	Bryndu Coal and Coke Co.	J. Williams -	Haulier -	16	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 7	65	Ynisfeio -	Pontypridd -	Troedyrhiw Coal Co. -	J. Thomas -	Labourer	—	Killed by an explosion of gas -	2	–	–	–	–	–	–	–	–
					D. Lodwick -	Labourer	—										
„ 9	66	Wallsend -	Llantrissant -	Llantwit Wallsend Coal Co.	- - -	- -	—	Killed by fall of roof - -	–	–	2	–	–	–	–	–	–
„ 13	67	Blaengwawr -	Aberdare -	D. Davis and Sons -	Thos. Rees -	Haulier -	—	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 15	68	Fowlers Pontypridd,	Pontypridd -	Fowler's Pontypridd Steam Coal Co.	T. Roseworthy -	Sinker -	34	Killed in shaft - - -	–	–	–	–	1	–	–	–	–
„ 27	69	Cwm Neol -	Aberdare -	Powell Duffryn Steam Coal Co.	John Jones -	Collier -	—	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 27	70	Abergorki -	Pontypridd -	Lletty Shenkin Coal Co.	O. Long -	Haulier -	20	Killed by trams - -	–	–	–	–	–	1	–	–	–
Oct. 1	71	Penrhiwfer -	Pontypridd -	Glamorgan Coal Co. -	E. Richards -	Haulier -	—	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 2	72	Gwendraeth -	Llanelly -	A. Thompson - -	J. Morgan -	Collier -	19	Killed by fall of coal - -	–	1	–	–	–	–	–	–	–
„ 2	73	Hook - -	Haverfordwest -	Powell - -	- - -	Overman	—	Killed by falling down air pit through rope breaking.	–	–	–	–	1	–	–	–	–
„ 4	74	Sguborwen -	Aberdare -	S. Thomas - -	W. Jones -	Collier -	13	Killed by fall of coal - -	–	1	–	–	–	–	–	–	–
„ 5	75	Dunraven -	Pontypridd -	London and South Wales Steam Coal Co.	J. Dawkins -	Labourer	—	Killed by trams - -	–	–	–	–	–	1	–	–	–
„ 7	76	Ynisarwed -	Neath - -	Ynisarwed Coal Co. -	John Jones -	Haulier -	32	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 8	77	Brithdir -	Neath - -	Dynevor Coal Co. -	D. Phillips -	Collier -	38	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1875.																	
Oct. 10	78	Abercumboy -	Aberdare -	D. Davis and Sons -	T. Davies -	Engineer	73	Killed by flywheel - -	–	–	–	–	–	–	1	–	–
,, 13	79	Merthyr Vale -	Merthyr Tydvil	Nixon, Taylor, and Cory -	E. Lewis -	Sinker -	36	Killed by prop striking him whilst engaged in taking down roof for arching.	–	–	–	–	–	1	–	–	–
,, 14	80	Navigation -	Aberdare -	Nixon, Taylor, and Cory -	A. Almonds -	Smith -	32	Killed on engine plane - -	–	–	–	–	–	1	–	–	–
,, 18	81	Ocean - -	Pontypridd -	D. Davies and Co. -	E. Davies	Collier -	25	Killed by fall of coal - -	–	1	–	–	–	–	–	–	–
,, 19	82	Ynisfeio -	Pontypridd -	Troedyrhiw Coal Co. -	Thos. Thomas -	Banksman	—	Killed by a piece of timber falling upon him.	–	–	–	–	–	–	–	1	–
,, 22	83	Dowlais -	Dowlais - -	Dowlais Iron Co. -	S. Davies -	Collier -	54	Killed by fall of coal - -	–	1	–	–	–	–	–	–	–
,, 25	84	Rhondda Merthyr	Pontypridd -	Rhondda Merthyr Coal Co.	J. Jenkins -	Collier -	17	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
,, 26	85	Plymouth -	Merthyr Tydvil	Plymouth Iron Co. -	L. Windsor -	Collier -	28	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
,, 26	86	Aberewmboy -	Aberdare - -	D. Davis and Sons -	S. Matthias -	Labourer	65	Killed by piece of coal falling down shaft.	–	–	–	–	1	–	–	–	–
,, 26	87	Dinas - -	Pontypridd -	Coffin and Co. - -	A. Ellis - -	Haulier -	35	Killed by trams - - -	–	–	–	–	–	1	–	–	–
,, 27	88	Gadlys -	Aberdare -	Gadlys Coal and Iron Co.	E. Howells -	Collier -	36	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
,, 29	89	Merthyr Vale -	Merthyr Tydvil	Nixon, Taylor, and Cory -	J. Jones and W. Rolls.	Carpenters	—	Killed by arch falling on them -	–	–	–	–	–	–	–	2	–
Nov. 6	90	Llantwit Wallsend.	Pontypridd -	Llantwit Wallsend Colliery Co.	J. Llewellyn -	Collier -	—	Killed by an explosion of gas -	1	–	–	–	–	–	–	–	–
,, 8	91	Middle Duffryn	Aberdare -	Powell Duffryn Steam Coal Co.	A. Tobias -	Haulier -	23	Killed by a kick from a horse -	–	–	–	–	–	1	–	–	–
,, 8	92	Aberdare -	Aberdare - -	Aberdare Iron Co. -	J. Riggs -	Haulier -	16	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
,, 13	93	Cwmaman -	Aberdare -	Cwmaman Merthyr Smokeless Steam Coal Co.	D. Davies -	Doorboy	15	Killed by trams - - -	–	–	–	–	–	1	–	–	–
,, 29	94	Llantwit -	Bridgend -	Llantwit Coal Co. -	Hy. Storry -	Collier -	23	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
,, 29	95	Ferndale -	Pontypridd -	D. Davis and Sons -	D. Moses -	Labourer	—	Killed by falling from pitbank on to railway.	–	–	–	–	–	–	–	1	–
,, 29	96	Plymouth -	Merthyr Tydvil	Plymouth Iron Co. -	D. Thomas -	Sinker -	—	Killed in shaft - -	–	–	–	–	1	–	–	–	–

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
1875.																	
Dec. 4	97	Penygraig -	Pontypridd -	Penygraig Coal Co.	Z. Williams and T. Thomas.	Colliers -	—	Drowned by influx of water from old workings.	–	–	–	–	–	2	–	–	–
„ 6	98	Llan - -	Cardiff -	T. W. Booker and Co. -	D. Evans and 15 others.	Colliers -	—	Killed by an explosion of gas -	16	–	–	–	–	–	–	–	–
„ 7	99	Mynydd Newydd	Swansea -	Vivian and Sons -	D. Williams -	Pitman -	42	Killed by falling down pumping shaft.	–	–	–	–	1	–	–	–	–
„ 8	100	Ocean -	Pontypridd -	Ocean Steam Coal Co.	J. Evans -	Haulier -	—	Killed by trams - - -	–	–	–	–	–	1	–	–	–
„ 8	101	No. 2 Clynmil	Merthyr Tydvil	Plymouth Iron Co. -	J. Newton -	Haulier -	—	Killed by piece of coal falling down shaft.	–	–	–	–	1	–	–	–	–
„ 10	102	Penallta -	Pontypridd -	E. Beddoe - -	- - -	Collier -	—	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
„ 27	103	Hendreladis -	Yniscedwyn -	Yniscedwyn Coal and Iron Co.	W. Phillips -	Collier -	28	Killed by explosion of gunpowder	–	–	–	–	–	1	–	–	–
								TOTAL - -	20	13	32	1	22	27	2	9	–

LIST of the FATAL IRON MINE ACCIDENTS, and Loss of LIFE arising therefrom, in the SOUTH WALES DISTRICT during the year ended 31st December 1875.

Date.	No. of Accidents.	Name of the Iron Mine.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	Underground.						On Surface.		
									Explosions.	Falls of Coal.	Falls of Stone.	Suffocation.	In Shafts.	Miscellaneous.	Machinery.	Miscellaneous.	Boilers bursting.
IRONSTONE (IN COAL MEASURES).																	
1875. Jan. 23	1	Penydarran -	Dowlais -	Dowlais Iron Co. -	D. Evans -	Miner -	34	Killed by fall of stone - -	–	–	1	–	–	–	–	–	–
METALLIFEROUS MINES.																	
LIST of the FATAL METALLIFEROUS MINE ACCIDENTS, and Loss of LIFE arising therefrom, in the SOUTH WALES DISTRICT during the Year ended 31st December 1875.																	
,, 4	1	Mwyndy -	Llantrissant -	Mwyndy Iron Ore Co. -	Geo. Rickard -	Miner -	—	Killed by fall of roof - -	–	–	1	–	–	–	–	–	–
Mar. 3	2	Bute - -	Llantrissant -	Dowlais Iron Co. - -	E. Reynolds -	Miner -	—	Killed by falling from carriage whilst ascending.	–	–	–	–	1	–	–	–	–
June 3	3	Mwyndy -	Llantrissant -	Mwyndy Iron Ore Co. -	J. Hammill -	Miner -	—	Killed by a fall of roof - -	–	–	1	–	–	–	–	–	–
									–	–	2	–	1	–	–	–	–

Mr. Moore's Report.

Report of the Inspector of Mines and Collieries in the Eastern District of Scotland for the Year ended 31st December 1875.—By Ralph Moore, Esq.

Rutherglen, Glasgow,
27th March 1876.

Sir,

I have the honour to submit my Annual Report for the year 1875, of my proceedings as Inspector of coal mines under the Coal Mines Regulation Act, 1872, and as Inspector of metalliferous mines under the Metalliferous Mines Regulation Act, 1872.

MINES UNDER THE COAL MINES REGULATION ACT.

At the close of the year 1874 the mining trade was in a very depressed state, and last year prices underwent a further reduction. Pig iron, which in January was 80*s.* per ton, was in December 63*s.* 2*d.* Coal in Glasgow was 8*s.* 9*d.* and 7*s.* respectively. Miners wages were at the same periods 5*s.* to 6*s.* and 4*s.* 6*d.* to 5*s.* per day respectively. The hewing price, which was in January 1*s.* 10*d.* per ton, was in December 1*s.* 6*d.* per ton, the reduction of 4*d.* per ton having been made in May.

The miners worked steadily and peaceably, so that, although 5 per cent. less men are returned, the output of minerals was 13 per cent. greater than in the preceding year. The quantity of coal raised was 11,419,619 tons; fireclay 110,923 tons; ironstone 803,665 tons; and oil shale 377,108 tons; being a total of 12,711,315 tons.

The persons employed were 41,314, 2,024 less than the preceding year. I am inclined to think that this number is nearly correct. The brisk demand for labourers to make new railways, and the comparatively low rate of miners' wages, induced many men, who had become miners during the time of high wages, to leave the pits. Again, during the high prices which ruled in 1872–73 many old pits were re-opened, and coal got at great expense, requiring a greater proportion of men. These are unprofitable, and are now laid in. Some of the new collieries in the Hamilton district are coming into play, and, as in these haulage machinery and other labour-saving arrangements are freely used, fewer miners are required for the same quantity. Coal-cutting machines, worked by compressed air, are also being used in some collieries, but have not as yet sensibly affected the produce of coal per person employed. The number of boys employed underground continues to show a marked decrease, there being 36 per cent. fewer between 12 and 13 years of age, and 8 per cent. between 13 and 16 years. What effect this will ultimately have on the number of miners remains to be seen. As a general rule boys do not readily enter pits after they are much above 13 years of age. As regards the hours worked by boys and women, I think the Act is being fairly observed, indeed in many cases the hours are shorter. Where the miners seldom work more than eight hours per day the boys are not required to stay their full time.

The lists show 62 fatal accidents, whereby 64 lives were lost. 315 persons were reported as injured by non-fatal accidents. Many of these latter were but little injured, while others were permanently disabled. For the most part they were injured by their own neglect, and the lists present no new features. All the fatal accidents, and most of the others, were carefully investigated, and measures taken, where necessary, with the view of preventing similar accidents. The causes of death are shortly noted in the lists, but I shall further notice them under the following heads:

Explosions of Fire-damp.

There were two persons killed by explosions of fire-damp, and 48 injured. The first on the list was a fireman in Newlands pit. He went in to examine a mine, followed within 50 yards by three workmen. He carried a naked light as well as a safety lamp. It appears that from some cause or other fire damp had accumulated outside of where he usually left his naked light, and when he met the gas the explosion took place. He was killed and two of the others were injured. This accident was caused by the gross neglect of the sufferers in failing to observe the General and Special Rules. The deceased was the person, appointed in terms of the 2nd General Rule, whose duty it was to "inspect with a safety lamp that part of the mine," and also to see that "a workman shall not go to work in such part" until the same . . . . "are stated to be safe." The other three persons neglected the 53rd Special

Rule, which states "they shall not proceed into travelling roads and working places until it shall have been reported by the fireman that they are safe to be entered." The other fatal accident was also caused by the gross negligence of the sufferer, who was oversman of No. 7 pit, belonging to the Rawyards Coal Company, near Airdrie. The pit had been newly sunk to the Kiltonque coal, the levels were in about 30 yards from the shaft, and they were breaking off the "long-wall heading." The deceased and four others were blasting down the roof, within 20 feet of the face. They had knocked out the bratticing, and thus prevented the air from reaching the face; the consequence was that fire-damp accumulated in it and reached them. They persevered, however, boring a hole with the light of a "Davy" lamp, and when it was ready to fire, they ignited the fuze with a piece of match paper. As might have been expected, when the shot went off it fired the gas, and burned him and the four others, who were within 20 yards of him. He died a few days afterwards; the others, who were not so much burned, recovered. Both of these cases showed a great want of discipline on the part of the officials. The history of the other accidents is somewhat similar, and none of them call for further remark.

It is creditable to the mine owners and managers to be able to say that there is a marked improvement in the distribution, and especially in the quantity of air sent into the mines, which in some cases is 90,000 cubic feet per minute. [It may give a better idea of this quantity to state that the air would rush at the rate of 30 miles an hour through an ordinary doorway $7\frac{1}{2}$ feet high and $4\frac{1}{2}$ feet wide.] I am aware that this is not so much as is sent into many of the English mines, but only ten years ago I do not think any mine in Scotland had half that quantity. In the best collieries it is well led up with bratticing to the faces; and the very reprehensible custom of allowing places to stand "up stoop" without bratticing, waiting for a "throughter" does not frequently occur. In many of the new collieries fans are being erected. The largest is that erected by the Cadzow Coal Company (40 feet diameter). In some of the older collieries furnaces have been replaced by fans. There are now 33 of them in operation—

of which 18 are in Lanarkshire,
2 ,, Stirling,
7 ,, Edinburgh,
5 ,, Fife,
and 1 ,, Linlithgow.

Falls of Roof and Sides.

28 persons were killed by falls of roof and sides, six less than last year, and as the decrease has been gradual since the passing of the new Act of 1872, it would appear to indicate that it is in some measure attributable to the 16th General Rule, by which the roof is under the control of the owner, or of others appointed by him. I am quite sure that more props are being set up than were formerly, but, in my opinion, the full benefit of that rule will not be gained without the adoption of "deputies,"—experienced men, whose sole duty is to set up props, and otherwise permanently to secure the roof, leaving the miner to set up only such props as he deems necessary for his own safety. Even in an economical point of view this would be a saving, as there can be no doubt much of the wood set up by the miners is not carefully put up, and some of it which is wasted and lost would be saved by these men. I am in hopes that the owners will ultimately take this view of the matter.

I have as in former years separated the coals worked by "stoop and room" from those worked by the "long wall" method. The proportion of deaths by "falls" in stoop and room was much less last year than in the preceding year. In long wall it remained about the same, the exact figures being,—stoop and room 541,855 tons in 1875, against 308,745 in 1874. Long wall, 375,067 tons in 1875, against 374,457 in 1874, per life lost.

Shaft Accidents.

The loss of life in shafts was 15, against 13 in the preceding year. There are a very great number of new sinking pits, and seven persons were killed in them by accidents peculiar to that dangerous occupation. Two persons have been killed by falling from mid-workings. There is no way of preventing loss of life from this cause, unless an arrangement is provided which will ensure that the opening to the shaft shall always be fenced when the cage is not there. One from an opening at the surface, where the self-acting wickets do not form a protection. In the latter case there was a door, to comply with the 14th General Rule, but it was left open by the sufferer. One from falling into the shaft at the pit-head, where the self-acting gates had not been put on. The other four were from miscellaneous causes.

Miscellaneous Accidents Underground.

12 persons were killed by miscellaneous accidents. 11 (of whom six were boys under 16 years of age) while passing on engine planes, and in drawing or driving, where they fell

in before loaded tubs and were run over. It is very difficult to find a remedy for these accidents, especially where they happen to boys, because, besides the dangerous nature of the occupation, there is the thoughtlessness and rashness natural to young boys, who are necessarily left a good deal to themselves. The rapidly increasing employment of machinery and horses will tend to add to these accidents, unless great care and discipline is exercised. In one accident the man failed to get away from a shot.

Accidents on the Surface.

Seven persons were killed by miscellaneous accidents on the surface; one of these by the bursting of a steam boiler. The boiler supplied steam to a pumping engine at a pit which stood in an isolated position, and out of sight from any houses. The engine did not require to go continuously. Deceased was the engineman; he commenced work at 6 A.M. on Sunday morning, and was standing his "long shift." No one was near him or had seen him from that time until about 4 o'clock on the following morning (Monday), when his body was found in the engine house, and the boiler exploded. It was conjectured that deceased had fallen asleep after firing the boiler, and before he had started the engine after one of its pauses, thus unduly raising the pressure of the steam, and the explosion was the result. The boiler was pressed at about 20 lbs. to the square inch, and had all the appliances required by the statute, but it was at least 10 years old. The other accidents contain no new feature worthy of remark.

General Remarks.

A number of complaints, anonymous and otherwise, were sent to me, all of which had attention. None of them had been registered by the workmen, in terms of the 30th General Rule. When I have been able to write to the senders of these complaints, I have always pressed upon them that notice of a defect should, in the first place, be entered in the report book, in terms of the above Rule, so that the attention of the manager may be called to it. None of the complaints referred to any defect by which the accidents reported were caused.

There appears to be a general desire to carry out the Act, and the returns show that upon the whole accidents are decreasing. If we compare the loss of life last year with the average of the last six years, we find a saving of fully 10 per cent. In "falls," which is the most prominent source of accident, there is a saving of 26 per cent. I have, further on, given tables which show this more fully. The credit may be fairly set down to the owners, who are endeavouring at great expense to carry out the Act, and to the increased vigilance on the part of the managers and officials. It may be well to point out, however, that the loss of life by falls, for every ten million tons raised, is 24·5, as against 13 in the county of Durham, so that there is still a great deal to do. Taking the loss of life from all causes, the number of deaths on the same quantity is 56, as against 41 in Durham. This appears to prove that by the adoption of the most approved modes of mining, and by care and discipline, a further saving of life may be hoped for.

The quantity of coal raised where the "long wall" method of working was practised was 6,001,067 tons, and where the coal was worked on the "stoop and room" system, 5,418,552 tons. The loss of life was 37 and 22 respectively, being 162,191 tons per life lost in "long wall," and 246,298 in "stoop and room."

I append a list of mines in the district.

I give the earnings of four colliers in Lanarkshire during 1875. (1.) A man worked 293 days, put out 1,067 tons 10 cwt. of coal, for 88*l.* 14*s.* 3*d.*, or an average of 6*s.* 0½*d.* per day for each day he worked. (2.) Another worked 293½ days, put out 853 tons, for 73*l.* 6*s.* 7*d.*, or an average of 5*s.* per day. (3.) Another worked 280 days, put out 776 tons 4 cwt., for 64*l.* 18*s.* 4*d.*, or an average of 4*s.* 7½*d.* per day. (4.) Another worked 287 days, put out 657 tons 13 cwt., for 64*l.* 14*s.* 8*d.*, or an average of 4*s.* 6*d.* per day.

QUANTITY of MINERALS raised during the year 1875.

	1875.	1874.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.
Coal	11,419,619	10,182,326	1,237,293	—
Fire-clay	110,923	84,305	26,618	—
Ironstone	803,665	701,073	102,592	—
Oil Shale	377,108	277,210	99,898	—
Total	12,711,315	11,244,914	1,466,401	—

Persons Employed.

	1875.	1874.	Increase.	Decrease.
Underground—				
Boys of 10 and under 12 -	—	15	—	15
Boys of 12 and under 13 -	456	713	—	257
Males of 13 and under 16 -	4,389	4,775	—	386
Males above 16 - -	29,410	30,631	—	1,221
Total underground -	34,255	36,134	—	1,879
Above ground—				
Boys of 10 and under 13 -	5	21	—	16
Girls of 10 and under 13 -	1	—	1	—
Males of 13 and under 16 -	334	367	—	33
Females of 13 and under 16 -	53	79	—	26
Women above 16 - -	686	757	—	71
Males above 16 - -	5,980	5,990	—	10
Total above ground -	7,059	7,214	—	155
Total number employed -	41,314	43,348	—	2,024

Number of Coal Mines, and Quantities raised by single companies.

	1875.	1874.
Number of Mines of all kinds -	379	366
„ Shafts of all kinds -	747	744
„ Collieries - - -	322	326
„ Coal pits - - -	653	660
„ Companies working coal	218	230
1 firm raised over	630,000 tons	
1 „ „ „	440,000 „	1 firm raised over 530,000 tons.
1 „ „ „	340,000 „	1 „ „ „ 370,000 „
3 firms „ „	300,000 „ each	1 „ „ „ 300,000 „
2 „ „ „	250,000 „ „	3 firms „ „ 250,000 tons each
4 „ „ „	200,000 „ „	3 „ „ „ 200,000 „ „
7 „ „ „	150,000 „ „	8 „ „ „ 150,000 „ „
14 „ „ „	120,000 „ „	10 „ „ „ 100,000 „ „
18 „ „ „	80,000 „ „	11 „ „ „ 80,000 „ „
23 „ „ „	40,000 „ „	31 „ „ „ 40,000 „ „
144 „ „ under	40,000 „ „	161 „ „ „ 40,000 „ „
Greatest quantity of coal put out of a single shaft -	145,000 tons -	- - 113,000 tons
ditto ditto out of a pair of shafts - - -	210,000 „ -	- - 166,000 „

Fatal Accidents and Deaths.

	1875.		1874.	
	Accidents.	Deaths.	Accidents.	Deaths.
Explosions - - -	2	2	5	7
Falls of roof and sides -	27	28	34	34
In shafts - - -	14	15	13	13
Miscellaneous underground -	12	12	6	6
Miscellaneous on surface -	7	7	9	9
Total - - -	62	64	67	69

Number of Persons Injured.

	1875.	1874.
By explosions	48	32
By falls of roof and sides	148	129
In shafts	26	21
Miscellaneous underground	68	55
Miscellaneous on surface	25	24
Total	315	261

Analysis of Deaths from falls of Roof and Sides in Coal Workings, by the different Modes of Working, 1875.

	Long Wall.	Stoop and Room.	Total.
Falls of coal at face	6	3	9
" " "stoops"	—	2	2
" of head coal	—	—	—
" of roof at face	6	2	8
" of "brushing" at face	3	1	4
" of roof at "stoops"	—	1	1
" " in roads	1	1	2
Total	16	10	26

Table showing the Quantity of Coal put out of each County, by the different Modes of Working, and the Deaths thereby, in the year 1875.

County.	Output of coal in 1875.			Long Wall.					Stoop and Room.					Total lives lost in 1875.	Total lives lost in 1874.
	Long Wall.	Stoop and Room.	Total.	Explosions.	Falls.	In Shafts.	Miscellaneous.	On Surface.	Explosions.	Falls.	In Shafts.	Miscellaneous.	On Surface.		
	Tons.	Tons.	Tons.												
Lanark (Eastern)	2,674,392	4,821,237	7,495,629	1	10	3	3	2	1	8	3	5	2	38	44
Stirling (Eastern)	745,001	19,000	764,001	—	1	2	—	1	—	—	—	—	—	4	4
Linlithgow	366,374	40,000	406,374	—	2	—	1	—	—	—	—	—	—	3	5
Edinburgh	511,311	184,385	695,696	—	—	1	—	—	—	1	—	1	—	3	4
Haddington	132,469	89,930	222,399	—	—	—	—	—	—	—	—	—	—	—	—
Fife	1,323,428	264,000	1,587,428	—	3	2	2	1	—	1	—	—	—	9	5
Clackmannan, Kinross, Perth, Sutherland	248,092	—	248,092	—	—	2	—	—	—	—	—	—	—	2	—
	6,001,067	5,418,552	11,419,619	1	16	10	6	4	1	10	3	6	2		
									1	16	10	6	4		
				In 1875					2	26	13	12	6	59	
				In 1874					7	30	11	5	9		62

TABLE showing the Loss of LIFE in a group of Wishaw Collieries, compared with the District and with Durham, in 1875.

—	Persons employed.	Coal raised.	Deaths from Accidents.					
			Explosions.	Falls.	In Shafts.	Miscellaneous.	On Surface.	Total Lives lost.
Group of 28 collieries in Wishaw, Hamilton, and Larkhall Districts	7,484	Tons. 3,536,922	—	9	—	4	1	14
Proportion of above for 10 million tons	21,159	10,000,000	—	25·4	—	11·3	2·8	39·5
Average of the whole district for 10 million tons	30,648	10,000,000	1·8	24·5	13·1	10·5	6·1	56
Durham, proportion for equal quantity, taking 1874 as a basis	30,238	10,000,000	1·1	13·0	7·6	13·0	6·5	41·2

TABLE showing the Loss of LIFE in Coal Mines in 1875, compared with the average loss of life during the last Six Years.

	Lives Lost.		Tons of Coal wrought per life lost in 1875. (11,419,619 tons.)	Average tons of Coal wrought per life lost in last six years. (58,269,962 tons.)	Per-centage.	
	In 1875.	In last six Years.			Saving.	Loss.
Explosions	2	27	5,709,809	2,158,147		
Falls	26	168	439,216	346,845	26·5	
In Shafts	13	71	878,432	820,704	6·9	
Miscellaneous	12	33	951,635	1,765,756	—	45·8
On surface	6	34	1,903,270	1,713,822	10·	
TOTAL	59	333	193,553	174,985 Average	10·5	

TABLE showing the FORTNIGHTLY EARNINGS of FOUR MINERS in LANARKSHIRE, during the Year 1875.

A first class miner; he worked in an ordinary 12 feet room during the first 14 fortnights, seam 5 ft. 6 ins., and in a heading, 10 feet wide, the remainder.

No. of Fortnight.	Days worked.	Coal put out.	Rate per ton.	Gross Amount.	Deductions.				Net Earnings.
					Pick-sharper.	Doctor.	School.	Total.	
		Tns. cts.	s. d.	£ s. d.	d.	d.	d.	s. d.	£ s. d.
1	8	25 13	1 10	2 7 0	6	4	—	0 10	2 6 2
2	8	27 19	„	2 11 3	6	4	—	0 10	2 10 5
3	9	28 15	„	2 12 8	6	4	—	0 10	2 11 10
4	12	48 5	„	4 8 6	6	4	—	0 10	4 7 8
5	12	42 17	„	3 18 6	6	4	—	0 10	3 17 8
6	11	37 8	„	3 8 5	6	4	—	0 10	3 7 7
7	12	42 4	„	3 17 4	6	4	—	0 10	3 16 6
8	12	40 4	„	3 13 8	6	4	—	0 10	3 12 10
9	12	46 12	1/10 1/6	4 0 9	6	4	—	0 10	3 19 11
10	12	41 18	1 6	3 2 10	6	4	—	0 10	3 2 0
11	11	33 19	„	2 10 11	6	4	—	0 10	2 10 1
12	12	38 11	„	2 17 10	6	4	—	0 10	2 17 0
13	12	36 8	„	2 14 8	6	4	—	0 10	2 13 10
14	12	44 8	„	3 6 8	6	4	—	0 10	3 5 10
15	8	30 19	1 8	2 11 7	6	4	—	0 10	2 10 9
16	12	50 16	„	4 4 8	6	4	—	0 10	4 3 10
17	11	41 9	„	3 9 1	6	4	—	0 10	3 8 3
18	11	43 5	„	3 12 1	6	4	—	0 10	3 11 3
19	12	44 9	„	3 14 1	6	4	—	0 10	3 13 3
20	12	44 9	„	3 14 1	6	4	—	0 10	3 13 3
21	12	49 11	„	4 2 7	6	4	—	0 10	4 1 9
22	12	40 14	„	3 7 10	6	4	6	1 4	3 6 6
23	12	42 8	„	3 10 8	6	4	6	1 4	3 9 4
24	12	52 3	„	4 6 11	6	4	6	1 4	4 5 7
25	12	41 9	„	3 9 1	6	4	6	1 4	3 7 9
26	12	50 17	„	4 4 9	6	4	6	1 4	4 3 5
	293	1,067 10	—	89 18 5	13s.	8/8	2/6	24 2	88 14 3

Average earnings for each day worked 6s. 0½d.

An average miner; he worked the first seven fortnights in an ordinary 10 feet room, seam 4ft. 6ins., and during remainder of year in an ordinary 12 feet room, seam 5 ft. 6 ins.

No. of Fortnight.	Days worked.	Coal put out.	Rate per ton.	Gross Amount.	Deductions.				Net Earnings.
					Pick-sharper.	Doctor.	School.	Total.	
		Tns. cts.	s. d.	£ s. d.	d.	d.	d.	s. d.	£ s. d.
1	8	20 2	2 8	2 13 7	6	4	—	0 10	2 12 9
2	11	26 8	„	3 10 5	6	4	—	0 10	3 9 7
3	11	22 0	„	2 18 8	6	4	—	0 10	2 17 10
4	11	24 0	„	3 4 0	6	4	—	0 10	3 3 2
5	11	22 16	„	3 0 9	6	4	—	0 10	2 19 11
6	11	26 8	„	3 10 5	6	4	—	0 10	3 9 7
7	11	24 8	„	3 5 1	6	4	—	0 10	3 4 3
8	11	24 8	1 10	2 4 8	6	4	—	0 10	2 3 10
9	12	36 8	1/10 1/6	3 3 8	6	4	—	0 10	3 2 10
10	12	34 16	1 6	2 12 2	6	4	—	0 10	2 11 4
11	11½	32 16	„	2 9 3	6	4	—	0 10	2 8 5
12	12	34 16	„	2 12 2	6	4	—	0 10	2 11 4
13	12	40 8	„	3 0 8	6	4	—	0 10	2 19 10
14	12	40 8	„	3 0 8	6	4	—	0 10	2 19 10
15	8	24 4	„	1 16 4	6	4	—	0 10	1 15 6
16	11	35 4	„	2 12 10	6	4	—	0 10	2 12 0
17	11	37 14	„	2 16 7	6	4	—	0 10	2 15 9
18	11	36 3	„	2 14 3	6	4	—	0 10	2 13 5
19	12	38 0	„	2 17 0	6	4	—	0 10	2 16 2
20	12	37 4	„	2 15 10	6	4	—	0 10	2 15 0
21	12	44 0	„	3 6 0	6	4	—	0 10	3 5 2
22	12	36 0	„	2 14 0	6	4	6	1 4	2 12 8
23	12	35 3	„	2 12 9	6	4	6	1 4	2 11 5
24	12	44 2	„	3 6 2	6	4	6	1 4	3 4 10
25	12	35 4	„	2 12 10	6	4	6	1 4	2 11 6
26	12	40 0	„	3 0 0	6	4	6	1 4	2 18 8
—	293½	853 0	—	74 10 9	13s.	8/8	2/6	24 2	73 6 7

Average for each day worked 5s.

An Average Miner. Soft or Ell Coal.

No. of Fortnight.	Days worked.	Coal put out.	Rate per ton.	Amount.
		Tns. cts.	s. d.	£ s. d.
1	8	20 10	1 10	1 17 7
2	12	26 0	„	2 8 10
3	11	35 3	„	3 4 4
4	12	36 4	„	3 6 4
5	11	30 17	„	2 16 6
6	12	32 7	„	2 19 3
7	11	31 5	„	2 17 3
8	11	23 15	„	2 3 6
9	8	23 7	1 6	2 0 10
10	12	36 16	„	2 15 2
11	11	31 14	„	2 7 6
12	12	30 6	„	2 5 5
13	12	31 17	„	2 7 9
14	11	29 4	„	2 3 9
15	8*	18 18	„	1 8 4
16	9*	22 18	„	1 14 4
17	11	33 6	„	2 9 11
18	12	38 3	„	2 17 2
19	10	25 9	„	1 18 2
20	10	32 18	„	2 9 4
21	12	33 16	„	2 10 8
22	12	26 3	„	1 19 2
23	10	26 18	„	2 0 4
24	11	33 16	2s.	3 7 7
25	11	31 4	„	3 2 4
26	10	33 10	„	3 7 0
—	280	776 4	—	64 18 4

Average for each day worked 4s. 7½d.

An Average Miner. Splint Coal.

No. of Fortnight.	Days worked.	Coal put out.	Rate per ton.	Amount.	—
		Tns. cts.	s. d.	£ s. d.	
1	8	15 17	2/6 2/	1 13 11	New year holidays.
2	10	23 16	„	2 11 7	
3	11	27 7	„	2 19 2	
4	12	26 10	„	2 16 9	
5	12	25 19	„	2 15 10	
6	11	25 17	„	2 14 11	
7	12	23 10	„	2 10 0	
8	12	28 9	„	3 0 10	
9	8	19 18	2/6 1/7½	2 0 1	Wages reduced.
10	10	24 8	„	2 2 1	
11	11	26 0	2/1½ 1/7½	2 5 11	
12	11	26 18	„	2 5 3	
13	11	23 0	„	1 19 6	
14	11	26 0	„	2 4 3	
15	11	20 10	2/4½ 1/10½	1 19 8	* Want of wagons.
16	12	27 0	„	2 12 10	„ „
17	12	27 10	„	2 13 3	
18	11	22 10	„	2 4 9	
19	10	25 10	„	2 10 8	
20	11	27 16	„	2 14 7	
21	11	25 9	„	2 10 11	
22	12	32 7	„	3 4 10	
23	12	27 16	2/3 1/10½	2 14 10	
24	11	23 8	2/4½ 1/10½	2 6 1	
25	12	27 9	„	2 14 8	
26	12	26 19	2/1½ 1/7½	2 7 6	
—	287	657 13	—	64 14 8	

Average for each day worked 4s. 6d.

MINES UNDER THE METALLIFEROUS MINES REGULATION ACT.

The quantity of minerals produced during the year 1875 were 176,378 tons.

The persons employed were 804.

I append a list of the mines in this district. They are mostly mines producing limestone.

There were two fatal accidents, causing the loss of two lives; one at Shetland in an iron-ore mine, by falling down the shaft; the other in a limestone mine at Carluke, by a fall of roof.

I have, &c.,

RALPH MOORE.

The Right Hon. R. A. Cross, M.P.,
Secretary of State for the Home Department,
&c. &c.

LIST of the FATAL ACCIDENTS, and LOSS OF LIFE arising therefrom, in MR. MOORE'S DISTRICT, comprising Upper and Middle Wards of Lanark, Eastern portion of Stirlingshire, Linlithgow, Edinburgh, Haddington, Fife, Clackmannan, Perth, Kinross, and Sutherland, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
						Explosions of Firedamp.							
Aug. 23	1	Newlands -	Bothwell, Lanark	Dunn Brothers - -	James McInally -	Fireman -	35	He was examining the place, and had a naked light as well as a "Davy" lamp.	1	–	–	–	–
Oct. 25	2	Rawyards -	New Monkland, Lanark.	Rawyards Coal Co. (Limited).	William Murray -	Overman -	40	Through his own recklessness in firing a "shot" when he knew the place contained gas.	1	–	–	–	–
								Total by explosions -	2	–	–	–	–
						Falls of Roof.							
Jan. 20	1	Lochore -	Ballingry, Fife -	Lochore and Capledral Cannel Coal Co. (Limited).	Walter Sneddon -	Collier -	22	At face. Soft "blaes" roof. (Long wall.)	–	1	–	–	–
Feb. 20	2	Rigside -	Douglas, Lanark	James Swann - -	George Gold -	Ditto -	30	At face, caused by a "long wall" break at a "lipe."	–	2	–	–	–
					Jas. Hamilton -	Ditto -	20						
„ 23	3	Carfin -	Bothwell, Lanark	William Dixon (Limited)-	John McLean -	Ditto -	17	In a "long wall" drawing road -	–	1	–	–	–
„ 26	4	Rochsolloch -	New Monkland, Lanark.	George Cowie & Sons -	Thos. McGowan -	Brusher -	40	He was taking down the stone which fell upon him. (Long wall.)	–	1	–	–	–
Mar. 15	5	Law - -	Carluke, Lanark	John Wilson - -	George Gorden -	Collier -	18	At face. (Stoop and room.) - -	–	1	–	–	–
July 7	6	Pather - -	Cambusnethan, Lanark.	Coltness Iron Co. -	John McKinnon -	Reddsman -	35	While redding across an old road. (Stoop and room.)	–	1	–	–	–
Aug. 5	7	Rosehall -	Bothwell, Lanark	Robert Addie & Sons -	Matthew Lindsay -	Collier -	51	A piece of stone fell from the roof upon him, which caused the pick he was working with to enter his groin. (Long wall.)	–	1	–	–	–
„ 19	8	Merryton -	Hamilton, Lanark	Merryton Coal Co. -	John Sommerville -	Ditto -	40	At face. Strong post roof. (Stoop and room.)	–	1	–	–	–

List of the Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives Lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
					Falls of Roof—continued.								
Sept. 1	9	Kinneil - -	Bo'ness, Linlithgow.	Geo. Wilson & Co. -	Jas. Sneddon -	Collier -	34	At face. Insufficient propping. (Long wall.)	–	1	–	–	–
„ 18	10	West Limerigg	Slamannan, Stirling.	Lacour & Watson -	John Marshall -	Brusher -	36	He was taking down the stone which fell upon him. (Long wall.)	–	1	–	–	–
Oct. 29	11	Browniesside -	New Monkland, Lanark.	Wm. Black & Sons -	Thos. Cane -	Collier -	19	At face. (Long wall) - - -	–	1	–	–	–
Nov. 5	12	Chapelside -	Ditto -	Ferrier & Strain - -	John Duffie -	Brusher -	40	He was taking down the stone which fell upon him. (Long wall.)	–	1	–	–	–
„ 30	13	Woodside -	Dalserf, Lanark -	Jos. Hutchison - -	William Melvin -	Roadsman -	34	A stone fell from the roof of a drawing road while he was examining it. (Stoop and room.)	–	1	–	–	–
Dec. 1	14	Overtown -	Cambusnethan, Lanark.	John Wilson - -	Adam Binnie -	Driver -	35	At "stoops." While at the miner's face the roof fell upon him unexpectedly.	–	1	–	–	–
								Total by falls of roof -	–	15	–	–	–
					Falls of Coal.								
Feb. 10	1	Overtown -	Cam'nethan, Lanark.	John Wilson - -	James Mullen -	Collier -	25	He was working off a pillar and a piece of coal fell over upon him. The seam was 9 feet thick.	–	1	–	–	–
May 19	2	Law - -	Carluke, Lanark	Ditto - - -	John Winning -	Ditto -	27	He was working away a pillar when the coal which he was holing and about to "blast" came over upon him.	–	1	–	–	–
June 4	3	Loganlea -	West Calder, Edinburgh.	Loganlea Coal Co. -	James Lind (sen.)-	Ditto -	58	The fall of the piece of coal he was working at knocked out a prop, and the roof (coal) fell upon him. (Stoop and room.)	–	1	–	–	–

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
					Falls of Coal—continued.								
July 12	4	Wellwood -	Dunfermline, Fife	Thos. Spowart & Co. -	John McQueen -	Collier -	53	The coal which he was taking down came over upon him; he had previously taken out the "sprags." (Long wall.)	–	1	–	–	–
„ 14	5	Blacktongue -	New Monkland, Lanark.	William Baird - -	Thos. Carrick -	Ditto -	26	At face of "long wall." Want of "sprags."	–	1	–	–	–
Sept. 1	6	Balbirnie -	Markinch, Fife -	John Balfour - -	James Wilson -	Ditto -	50	The coal which he was trying to take down fell upon him. (Stoop and room.)	–	1	–	–	–
„ 24	7	Chapelside -	New Monkland, Lanark.	Ferrier and Strai -	Sam. Simpson -	Ditto -	—	At face. (Long wall.) Died 11th Nov.	–	1	–	–	–
Oct. 1	8	Kingseat -	Beath, Fife -	Henderson, Wallace, & Co.	James Muir -	Ditto -	14	While "holing" the coal came over upon him. (Long wall.)	–	1	–	–	–
„ 18	9	Kinneil -	Bo'ness, Linlithgow.	Geo. Wilson & Co. -	Thos. Rae -	Ditto -	24	The coal which he was trying to take down came over upon him. (Long wall.)	–	1	–	–	–
„ 26	10	Sunniside -	Cam'nethan, Lanark.	Merry & Cunninghame -	Jas. Wright -	Ditto -	40	While taking down the coal he failed to get out of the way. (Long wall.)	–	1	–	–	–
Dec. 18	11	Dalzell -	Dalzell, Lanark -	Jno. McAndrew & Co. -	Robt. Maxwell -	Ditto -	60	While "shearing" the coal after it was holed it fell upon him. (Stoop and room.)	–	1	–	–	–
								Total by falls of coal -	–	11	–	–	–

IN SHAFTS.

Overwinding—None.

Ropes and Chains breaking—None.

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
					Whilst ascending or descending.								
May 3	1	Clackmannan -	Clackmannan -	Clackmannan Coal Co. -	Caleb Bridgman -	Sinker -	28	In ascending sinking pit from a shot he was caught by the mid-wall and fell to the bottom, a depth of 16 fathoms.	–	–	1	–	–
Oct. 29	2	Allanton -	Cam'nethan, Lanark.	Morningside Coal Co. -	John Marshall -	Ditto -	—	While descending in the cage the drum got out of gear.	–	–	1	–	–
31	3	Allanshaw -	Hamilton, Lanark	Jno. Sneddon and Co. -	Edward Connor -	Ditto -	25	Fell off sinking "kettle" while ascending. He got entangled with the signal wire.	–	–	1	–	–
									–	–	3	–	–
Dec													
					Falling into Shaft from Surface.								
Mar. 22	4	Blairadam -	Blairadam, Kinross.	The Fife Coal Co. (Limited)	D. Fotheringham -	Pony driver	14	He ran a tub into the shaft when the cage was not there, and there was no self-acting fence to stop it.	–	–	1	–	–
Sept. 16	5	Blantyre -	Blantyre, Lanark	Wm. Dixon (Limited) -	D. Crawford -	Sinker -	24	He was bringing a cistern up a sinking pit, which caught on reaching the surface and pitched him off.	–	–	1	–	–
„ 23	6	Fordell -	Dalgety, Fife -	G. W. M. Henderson -	David Dryburgh -	—	—	He was pushing a wooden water box into the shaft when the cage was not there to receive it.	–	–	1	–	–
									–	–	3	–	–

Things falling from Surface—None.

List of the Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
								Falling from part way down.					
Jan. 14	7	Bredisholm -	Bothwell, Lanark	Provanhall Coal Co. -	James McEwan -	Collier -	20	He pushed a tub into a "blind" pit and fell along with it a depth of 13 fathoms. It was the first day of the pit being used, and the gate had not been put on. Gates have since been put on.	–	–	1	–	–
July 6	8	Wilsontown -	Carnwath, Lanark	Gavin Paul - -	Robert McKirdy -	Pumper -	30	While foolishiy attempting to climb up during night time. He could have gone a nearer way to a stair-pit.	–	–	1	–	–
„ 19	9	Gartness -	New Monkland, Lanark.	Gartness Mineral Co. (Limited).	David Woodhead -	Collier -	20	Fell through a hole in the scaffold, of which he had got no warning.	–	–	1	–	–
Sept. 25	10	Shieldhill -	Polmont, Stirling	Carron Co. - -	Thos. Anderson -	Sinker -		They were enlarging the shaft, when the scaffold on which they worked gave way.	–	–	2	–	–
					Robt. Thomson -	Ditto -			–	–	5	–	–
								Things falling from part way down.					
Feb. 1	11	Whitehill -	Lasswade, Edin.	Archd. Hood - -	Thos. Hannan -	Sinker -	31	A piece of stone fell out of the side of a sinking pit and struck him. The walling was 11 fathoms back; they had made preparations for walling next day.	–	–	1	–	–
								Miscellaneous in Shafts.					
June 4	12	Alloa, Holton -	Alloa - -	Alloa Coal Co. - -	Alex. Fyfe -	Bottomer -	33	He was found in the bottom of the shaft, with the cage resting on his body.	–	–	1	–	–
								Total in Shafts -	–	–	13	–	–

List of the Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
MISCELLANEOUS UNDERGROUND.													
Explosions of Gunpowder, &c.—None.													
Suffocation by Gases.—None.													
Irruptions of Water.—None.													
Falling into Water.—None.													
On Inclined Planes.													
Feb. 10	1	Garrion Gill	Cam'nethan, Lanark.	Coltness Iron Co.	Stephen Kennedy	Driver	16	Crushed between tubs and a prop at the top of an engine plane while detaching rope. He had no duty there.	–	–	–	1	–
„ 11	2	Woodside	Dalserf, Lanark	Jas. Smith and Sons	John Barr	Switch keeper	15	Crushed on engine-plane. He was found under the tubs. It was supposed he had been riding on the train, which was against orders.	–	–	–	1	–
Mar. 27	3	Benhar (East)	Whitburn, Linlithgow.	Benhar Coal Co. (Limited)	Thomas Gillies	Set-rider	15	He fell off train and was run over on an engine-plane.	–	–	–	1	–
Aug. 5	4	Kippbyre	New Monkland, Lanark.	Jas. Nimmo and Co.	Alex. Pender	Incline-boy	18	Fell off before the wheels and was run over by tubs on an engine-plane. He was riding on the train against orders.	–	–	–	1	–
Dec. 2	5	Carberry	Inveresk, Edinburgh.	Deans and Moore	Alex. King	Collier		He was travelling up an incline and was met by the truck coming down.	–	–	–	1	–
									–	–	–	5	–

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
					By Trams and Tubs.								
	6	Greenfield -	Hamilton, Lanark	Hamilton Coal Co. -	John Stewart -	Driver -	13	Fell off his tub and was run over -	–	–	–	1	–
,, 31	7	Auchenheath -	Lesmahagow, Lanark.	Nitshill and Lesmahagow Coal Co.	John Prentice -	Drawer -		Tub ran away while he was in front of it, and knocked him against side.	–	–	–	1	–
June 10	8	Carfin -	Bothwell, Lanark	A. G. Simpson - -	John Vallalay -	Drawer -	19	Crushed between top of tub and roof on a "brae."	–	–	–	1	–
Oct. 14	9	Quarter -	Hamilton, Lanark	Colin Dunlop and Co. -	Geo. Campbell -	Collier -	50	Crushed between a loaded hutch and roof while riding out on the horse-road.	–	–	–	1	–
, 25	10	Cuttlehill -	Beath, Fife -	Henderson, Wallace, and Co.	Thos. Robertson -	Driver -	15	He was riding on his hutch and fell off before the wheels and was crushed.	–	–	–	1	–
									–	–	–	5	–
					***By Machinery Underground*—None.**								
					Sundries Underground.								
June 8	11	Muircockhall, -	Dunfermline, Fife	West of Fife Coal Co. -	- - -	Collier -	—	Failed to get away from a shot -	–	–	–	1	–
Nov. 27	12	Overtown -	Cam'nethan, Lanark.	John Wilson - -	Wm. Russell -	Driver -	14	Struck with the chain at the top of a self-acting incline.	–	–	–	1	–
									–	–	–	2	–
								Total, Miscellaneous Underground -	–	–	–	12	–

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.				
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
ON SURFACE.													
By Machinery on Surface.—None.													
Boilers bursting.—None.													
Miscellaneous on Surface.													
Jan. 25	1	Stanerigg -	Slamannan, Stirling.	Matt. Hay & Son -	John Gillies -	Pitheadman		Run over by an empty wagon on a branch railway while going from his work.	–	–	–	–	1
Mar. 18	2	Thankerton -	Bothwell, Lanark	Monkland Iron and Coal Co., (Limited).	Robt. McGowan -	Wagonman	20	Run over by a wagon on a branch railway.	–	–	–	–	1
„ 27	3	Morningside -	Cam'nethan, Lanark.	Shotts Iron Co. - -	John Griffiths -	Labourer -	60	Fell down a screen in front of a loaded hutch.	–	–	–	–	1
„ 30	4	Carnbroe -	Bothwell, Lanark	Merry and Cunninghame (Limited).	Wm. Murrie -	Screenman	18	Run over by a wagon at screens -	–	–	–	–	1
June 15	5	Denend -	Lochgelly, Fife -	Denend Coal Co. -	Robt. Smith -	Engineman		Fell off the engine beam while screwing a bolt. He landed on some part of the machinery and was injured internally.	–	–	–	–	1
Aug. 25	6	Parkhead -	Dalzell, Lanark -	John Watson - -	Alex. Coats -	Wagonman	56	Jammed between wagons on siding -	–	–	–	–	1
								Total on Surface -	–	–	–	–	6
								Total in Coal Mines (59) -	2	26	13	12	6

In Fire-clay Mines.—None.

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, a	Number of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
					In Ironstone Mines.								
Feb. 8	1	Bankend -	Lesmahagow, Lanark.	Monkland Iron and Coal Co., (Limited).	Robert Brown -	Engineman	—	Explosion of boiler of a pumping engine. The boiler was worn out. It exploded some time during Sunday night, and no one but deceased was near. It was supposed he had fallen asleep after firing the boiler and allowed the steam to get too high.	–	–	–	–	1
Mar. 11	—	Polkemmet -	Whitburn, Linlithgow.	Shotts Iron Co. - - -	Thomas Welsh -	Miner -	52	Fall of roof at face of "long wall," while holing.	–	1	–	–	–
April 5	—	Arden -	New Monkland, Lanark.	Ditto - - -	Wm. Jeffrey -	Contractor -	26	Fall of roof in a stone "mine" - -	–	1	–	–	–
Aug. 26	—	Polkemmet -	Whitburn, Linlithgow.	Ditto - - -	Robt. Gibson -	Roadsman -	34	Fell out of cage while repairing signal wire.	–	–	1	–	–
								Total in Ironstone Mines - 4 -	–	2	1	–	1
					In Shale Mines.								
Dec. 29	1	Oakbank -	West Calder, Edinbro'.	Oakbank Oil Co. -	Alex. Calderwood-	Roadsman -	21	The side of the shaft at the surface gave way as he was descending.	–	–	1	–	–
								Total in Shale Mines -	–	–	1	–	–

38969.

APPENDIX No. 6.

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Adams, Ord	Hill of Beath	Beath	Fife	D. Adams	Engine	5 feet 5′ 6″ Dunfermline Splint.	Long wall	37	89	12×6	726	6×5	726	—	3,960	20	19,805	Fan.	N.F.	Fan 20′×5.
						Lochgelly do.	Do.		84	—	240	—	726	—	—	20	—	—	N.F.	
					West pit	Fire-clay	Do.	3	11	9×4	90	5×4	90	—	550	20	10,000	—	N.F.	
Addie, Gavin, & Son.	Braidhurst	Dalziel	Lanark	T. S. Sneddon	No. 1	Main, 3′ 6″, and Pyotshaw.	Stoop and room	6	40	5½×5½	548	8×5½	548	—	5,680	20	11,000	Fur.	F.	
					No. 2		Do. & Long wall	7	40	14×5	588	—	—	—	—	24				
Addie, Gavin, & Co.	Rawyards	New Monkland	Do.	Robt. Addie	No. 1		Long wall	5	30	—	—	—	—	—	—	—	15,000	Fur.	—	
Addie, Robert, & Sons.	Rosehall	Bothwell	Do.	John Smith	No. 7	Splint	Do.	12	131	14×5	810	12×5	444	3	4,100	25	26,220	Fan.	F.	"Schiele" Fan. 5 dia.
						Main, 3′ 9″	Do.													
						Pyotshaw	Do.													
					No. 13	Do.	Do.	10	94	14×5	690	12×5	444	2	3,600	25	19,180	Fan.	F.	
Allan, James	Wilsontown Junction.	Carnwath	Do.	Matt. Tulley	No. 1	Main	Do.	—	—	6×6	36	4½×6	36	—	960	12	600	Fur.	N.F.	Pit stopped.
						Gas														
Alloa Coal Co.	Alloa	Alloa	Clackmannan	And. Hunter	Garnstar	Splint	Do.	16	108	13×5	190	13×5	195	1	1,418	24	10,050	Fur.	N.F.	
					Whinhill	Cherry	Do.	11	66	10×5½	168	5×5½	168	1	1,400	27	13,700	Fur.	N.F.	
					Broom	Splint	Do.	5	33	10×9	222	11×5½	78	1	930	30	10,200	Fur.	N.F.	
					Holton, No. 1	Nine feet	Do.	14	42	13×10½	318	5×4½	284	—	1,400	25	10,000	Fur.	N.F.	
					Do. No. 2	Cherry and Splint	Do.	7	47	12×10	270	10×10	450	1	1,640	20	10,300	Fur.	N.F.	
					Sprotwell	Upper, 5 feet	Do.	7	38	5×4½	222	5×3	150	—	2,096	22½	6,550	Fur.	N.F.	
Do.	Sheardale	Dollar	Do.	Do.	Sheardale	Cherry	Do.	4	28	13×5	168	8×8	60	—	500	24	8,500	Fur.	N.F.	
						Splint	Do.													
					No. 1 Mine	Splint and Cherry	Do.	4	25	7×6	—	9×4½	126	—	508	24	9,000	Fur.	N.F.	
Do.	Tillicoultry	Clackmannan	Do.	Do.	No. 1 Mine	Cherry and Splint	Do.	5	53	7×6	—	7×5	42	1	1,470	25	12,600	Fur.	N.F.	
					No. 2 Drummie	Do. do.	Do.	8	74	7×5½	—	13×5	90	—	616	24	13,000	Fur.	N.F.	
												9×4½	126							
Clackmannan Coal Co.	Clackmannan	Do.	Do.	Wm. Arnot	No. 14	Splint, 3′ 4″, and Cherry	Do.	14	73	9	258	9	138	1	2,160	16	15,500	Fur.	N.F.	
					No. 15		Do.	8	48	8	210	9	138	—	1,720	18	6,000	Fur.	N.F.	
					No. 5 Southfield	Do. do.	Do.	9	45	10	360	9	114	—	2,100	18	12,000	Fur.	N.F.	
Do.	Kennetpans	Clackmannan	Do.	Do.	No. 1	Cherry	Do.	9	65	13×5½	360	12×4½	140	—	2,500	16	10,000	Nat.	N.F.	
Austine & Co.	Allanton	Hamilton	Lanark	Malc. McFarlane	No. 1	Ell Coal	Stoop and room	26	127	16×6	385	3½×6	415	1	9,560	62	40,000	Fan.	F.	Guiba 30′×10′.
					No. 2	Main	Do.	—	16	12×6	494	4×6	538	—	3,360	36	8,000	—	F.	
					No. 2	Splint, 5′	Do.	28	92	—	554	—	598	1	7,170	42	36,000	—	F.	
Arniston Coal Co. (Limited).	Arniston	Cranston	Edinburgh	William Morris	Emily	Parrot		20	195	15×9	960	11	600	2	1,200	33	18,720	Fur.	N.F.	
						Splint, 4′														
						Great														
					Engine	Kailblades		6	50	15×9	960	11	600	1	520	36	4,800	Fur.	N.F.	
					Camp	Parrot		5	50	7×5	156	5×4	156	—	500	20	2,400	Fur.	N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Avonhead Coal Co.	Avonhead	New Monkland	Lanark	Alex. Gillespie	No. 1	Virtuewell	Long wall	8	30	5×5½	132	5×5½	132	–	600	14	9,000	Fur.	F.	
					No. 4	Do.	Do.	2	13	5×5½	66	5×5½	60	–	570	12	1,500	Fur.	F.	
					No. 5	Do.	Do.	2	17	—	—	—	—	–	—	—	—	—	—	
Alexander, C. J.	Jawcraig	Slamannan	Stirling	John Adam	No. 6	Coxrod	Do.	6	4	12×5	87	—	—	–	220	20	2,000	Fur.	N.F.	
					No. 13	Do.	Do.	3	29	—	—	10×5	66	1	700	20	2,560	Fur.	N.F.	
					No. 14	Do.	Do.	2	8	6½×	42	4½×	42	–	22	20	2,000	Fur.	N.F.	
Baird, R., & Co.	Limerigg & West Drumclair	Do.	Do.	J. Wotherspoon	No. 1	Splint	Do.	3	40	6½×5	282	4½×5	294	1	400	26	4,000	Fur.	F.	
					No. 2	Do.	Do.	2	6	6½×5	204	4½×5	216	–	400	26	4,000	Fur.	F.	
					No. 2	Coxrod	Do.		5	—	288	—	300	–	250	26	2,500	Fur.	F.	
					No. 4	Splint	Do.	2	19	7½×5	216	4½×5	230	–	120	22	6,000	Fur.	F.	
					No. 5	Do. and Coxrod	Do.	4	37	12×5½	300	2½×5½	300	3	300	24	6,000	Fur.	F.	
Baird, W., & Co.	Stand	New Monkland	Lanark		No. 4			–	–	—	—	—	—	–	—	—	—	—	—	
Do.	Bothwell Park	Bothwell	Do.	D. Cameron	No. 1			8	18	—	—	—	—	–	—	—	—	—	—	Sinking.
					No. 2			6	15											
Do.	Craighead	Do.	Do.	Do.	No. 1			6	21	—	—	—	—	–	—	—	—	—	—	Ditto.
					No. 2			8	18	—	—	—	—	–	—	—	—	—	—	Ditto.
Do.	Bothwell Castle	Do.	Do.	Do.	No. 2			7	21	—	—	—	—	–	—	—	—	—	—	Ditto.
Baird, Wm.	Blacktongue and Boglea.	New Monkland	Lanark	Jno. Livingstone	No. 1	Kiltongue	Long wall	4	14	8×5	90	5×5	90	–	320	16	14,400	Fur.	F.	
Balfour, Chas.	Balgonie	Markinch	Fife	Geo. Linton	Lochtyside	Nine feet	Do.	20	78	10×5	396	6×5	72	1	1,400	20	7,00 0	Fur.	N.F.	
Balfour, John	Balbirnie	Do.	Do.	Jno. Oswald	Quarry	Little Coal	Do.	2	18	7×4½	60	7×4½	120	1	600	16	1,800	Fur.	N.F.	
					Pitcairn	Do.	Do.	2	17	5	54	5½	60	–	1,600	16	1,200	Fur.	N.F.	
					Newton	Main Coal	Do.	7	44	5½	120	5×7	60	–	1,800	24	1,450	Fur.	N.F.	
Barr, Wm., & Sons	Over Dalserf	Dalserf	Lanark	Wm. Barr	No. 1.	Ell Main and Splint	Stoop and room	4	19	4×5½	72	3½×5	72	–	460	32	11,000	Fur. & S. jet.	F.	
					No. 2.		Do.	7	20	9×5	168	12×5	78	–	1,500	45	12,000			
					No. 3		Do.	7	43	5½×4	240	5½×4	240	–	1,500	45	12,000			
Barr, Thomas	Bush	Cambusnethan	Do.	Jno. McCulloch	No. 1	Ell Coal	Do.	8	60	12×5	80	5×5	42	1	700	30	7,000	Fur.	N.F.	
	Orchard	Carluke	Do.	Do.	No 1	Gas Coal	Long wall	14	80	16×5	120	4×4	—	1	1,400	16	5,000	Fur.	F.	Fur. on surface.
Barr and Higgins	Langbyres	Do.	Do.	Thos. Lithgow	No. 2	Virtuewell	Do.	–	–	—	—	—	—	–	—	—	—	—	—	
					Nos. 3 and 4	Virtuewell	Do.	3	24	12×5	60	9×5	48	1	550	12½	3,990	Fur.	N.F.	
Do.	Westwood	Do.	Do.	Do.	No. 1	Virtuewell	Do.	6	56	8×5	60	12×5	138	1	870	16	5,040	Fur.	N.F.	
Do.	Bowhousebog	Do.	Do.	Do.	No. 2		Do.	–	—	8×5	80	10×5	48	–	350	22	1,980	Fur.	N.F.	
Barr & McCulloch	Kirkton	Carluke	Lanark	J. McCulloch	No. 1	Carluke, 2nd Seam	Stoop and room	7	15	7×5	80	5×4	42	–	350	16	3,000	Fur.	N.F.	
					No. 2	do., 1st & 2nd do.	do.	5	10	8½×5	205	4½×5	210	–	—	—	—	—	—	Sinking.
Barrowman, Thos.	Canderside	Dalserf	Do.	Thos. Barrowman.	No. 1	Virtuewell	Long wall	5	24	3½×3½	Mine	10×5½	66	–	400	14	5,000	Fur.	N.F.	
Bell, Robert	Green	Cam'nethan	Do.	Thomas Bell	No. 4	Splint	Stoop and room	7	66	9×6	360	14×6	438	1	2,800	24	13,314	Fur.	F	No. 4 upcast.
					No. 5	Main	Do.	28	68	9×6	300	14×6	438	1	2,800	24	13,314	Fur.	F.	No. 5 downcast.

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Bell, Robert	Broxburn	Uphall	Linlithgow	Thomas Bell	Newbigging-No. 4-No. 5	Coal	Stoop and room	–	–	10×6	Mine	7×7	90	–	500	34	5,000	Fur.	F.	
							Do.	–	–	6×6	Mine	12×6	144	1	440	34	6,000	Fur.	F.	
							Do.	6	24	8×6	516	6×6	516	–	500	35	5,000	Fur.	F.	
Bellsdyke Coal Co.	Bellsdyke	New Monkland	Lanark	And. Pettigrew	No. 1	Kiltongue, 3′	Long wall	2	17	11×5	180	6×5	180	–	200	16	1,400	Fur.	F.	
					No. 1	Drumgray	Do.	2	33	5×5	228	6×5	228	–	60	16	1,760	Fur.	F.	
					No. 2	Do.	Do.	2	35	11×5	270	—	—	–	100	16	1,920	Fur.	F.	
					No. 2	Kiltongue	Do.	2	8	11×5	270	—	—	–	80	16	1,600	Fur.	F.	
					No. 3	Virtuewell	Do.	4	51	5×7	438	5×5½	312	–	160	18	3,200	Fur.	F.	
					No. 3	Kiltongue, 4′	Do.	–	–	5×7	438	5×5½	312	–	—	—	—	—	—	Not working.
Benhar Coal Co. (Limited).	Benhar (West)	Shotts	Do.	Jas. Barrowman	Hartwoodhill, No. 2.	Virtuewell-Smithy	Do.	6	36	10×5	78	12½×5	240	1	2,040	17	6,290	Fur.	N.F.	
					Baton	Virtuewell, 3′	Do.	4	30	12×5	54	5×4½	54	1	1,900	24	9,124	Fur.	N.F.	
					No. 6 Pit	Do.	Do.	8	74	14×6	180	12½×5	126	–	2,332	20	6,323	Fan	N.F.	
					No. 10 Pit	Do. 3′ 10″	Do.	5	50	11×6	126	—	—	–	1,122	30	8,000	—	N.F.	
					Starryshaw	Do. 4′ 2″	Do.	12	69	10½×5½	198	14×5	198	–	4,708	28	10,920	Fur.	N.F.	
					No. 15	Ball Coal	Do.	4	21	14×5	186	6×5	186	1	1,111	20	8,000	Fur.	N.F.	
					Blairmuckhill	Do.	Do.	4	14	15½×5	126	6×5½	126	1	682	27	10,125	Nat.	N.F.	
Do.	Do. (East)	Whitburn	Linlithgow	Thos. Gillies	No. 6	Virtuewell, 4′	Do.	3	27	12×5	186	12×5	120	1	460	26	5,706	Fur.	N.F.	
					No. 10	Ball Coal, 2′ 4″	Do.	8	75	10×5	324	12×5	342	1	1,186	26	19,000	Fur.	N.F.	
					No. 13	Do.	Do.	5	44	10×5	324	12×5	342	1	1,186	26	19,000	Fur.	N.F.	
					No. 15	Do.	Do.	4	38	18×6	360	6×3	360	1	800	28	10,000	Fur.	N.F.	
Do.	Niddrie	Liberton	Edinburgh	James McNeil	No. 1	South Parrot	Stoop and room	4	14	11×5	564	9×9	84	1	200	17½	5,250	Fur.	N.F.	"Edge coals."
					No. 2	North Greens	Do.	3	6	11×5	642	9	100	1	600	24	9,800	Nat.	N.F.	
					No. 3	-	-	4	9	7	300	5×6	300	—	—	—	—	—	—	Sinking.
					No. 7	Great Stairhead	Do.	20	130	16×5	660	9×4½	120	1	1,450	40	12,000	Fan.	N.F.	Fan 18′×7′.
					No. 8	-	-	–	–	—	—	—	—	–	—	—	—	—	—	
					No. 10	Great Stairhead	Do.	20	150	16×6	420	9×4½	120	1	850	40	12,800	Fan	N.F.	
					No. 11	-	-	5	12	10×6	390	6×6	390	–	—	-	—	—	—	
					No. 5	-	-	4	10	11×6	348	5×6	348	-	—	-	—	—	—	Sinking.
					No. 6	-	-	4	9	11×5	630	4×4	630	–	—	—	—	—	—	Do.
Black, Wm., & Sons	Arden	New Monkland	Lanark	Jas. Prentice	No. 1	Virtuewell and Upper Drumgray.	Do.	5	25	7½×5	280	5½×5	300	1	690	20	2,800	Fur.	F.	
					No. 1															
					No. 2	Virtuewell	Do.	3	20	7½×5	132	5½×5	142	1	750	20	1,800	Fur.	F.	
					No. 3	Splint, 4′ 6″	Stoop and room	5	20	13×5	66	8×5	78	1	210	45	5,000	Fur.	F.	
					No. 4	Virtuewell	Long wall	6	45	7½×5	162	6×5	162	1	208	24	4,060	Fur.	F.	
					No. 6	Do. 2′ 1″	Do.	2	30	7×5	84	5×5	90	–	150	24	2,000	Fur.	F.	
Do.	Airdriehill	Do.	Do.	Do.	No. 1	Kiltongue	Do.	7	60	14×5	300	12×5	270	2	730	25	7,010	Fur.	F.	
					No. 2	Do. and Upper Drumgray.	Do.	5	30	—	—	—	—	1	790	24	—	Fur.	F.	
Do.	Brownyside	Do.	Do.	Do.	No. 1	Lower Drumgray	Do.	15	150	14×5	300	12×5	315	4	860	25	12,800	Fur.	F.	
Do.	Meadowfield	Do.	Do.	Do.	No. 4	Splint	Do.	5	20	7×5	66	5½×5	74	–	60	20	1,500	Fur.	F.	
Do.	Whiterigg	Do.	Do.	Do.	No. 1	Virtuewell	Do.	4	20	7½×5	66	5½×6	78	–	90	24	1,500	Fur.	F.	
Do.	Southfield	Slamannan	Stirling	John Errington	No. 1	Coxrod and Splint	Do.	28	110	7×5	342	6×5	360	2	1,010	20	6,510	Fur.	N.F.	
					No. 2	Coxrod	Do.	2	10	6×5	240	6×5	250	1	730	18	800	Fur.	N.F.	
					No. 3	Virtuewell & Splint	Do.	5	48	8×5	96	5×5	111	1	410	20	3,300	Fur.	N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Blackrigg Coal Co.	Blackrigg	New Monkland	Lanark	John Love	No. 1 No. 2	Humph Mussel Band Coal	Long wall Do.	3 3	18 8	12×5 —	66 —	10×5 12×5	30 108	—	60 80	24 27	4,000 3,400	Fur.	N.F.	Stopped temporarily.
Bowman & Co.	Cameron	Markinch	Fife	And. Crookston	No. 1 No. 2	Dysart Main	Do.	8	47	10×5	114	13×5	192	1	1,000	25	6,500	Fur.	N.F.	
Do.	Muiredge	Wemyss	Do.	Do.	No. 1 No. 2	Chemiss 6 feet.	Do.	40	164	15×6	480	10×5	438	1	4,225	25	8,500	Fur.	N.F.	
Brand, Mrs.	Greenhead	Cam'nethan	Lanark	Thos. Gardiner	No. 1 No. 2	Ell Do., 8′ 3″	Stoop and room Do.	7 7	25 32	11×5 10×5	216 132	3½×5 3½×5	252 162	1 1	800 700	16 20	6,800 12,600	Fur. Fur.	F. F.	
Brown, Thomas	Largoward and Lathallan	Kilconquhar	Fife	Thos. Ireland	No. 1 No. 2	Splint	Long wall	18	111	14×5	384	9×5	300	1	694	12	11,000	Fur.	N.F.	
Blairingone Coal Co.	Blairingone	Fossoway	Perth	James Clark	No. 1	Coalsnaughton-main.	Do.	3	10	6×5½	168	5½×4	168	—	360	24½	8,213	Fur.	N.F.	
Brownrigg Coal Co.	Brownrigg	New Monkland	Do.	Jno. Park	No. 1 No. 2	Drumgray Do.	Do. Do.	7 4	45 26	8×5 6×5	90 144	5×5 5×5	100 154	— —	500 352	18 20	2,500 1,800	Fur. Fur.	N.F. N.F.	
Bent Colliery Co.	Bent	Hamilton	Do.	—	No. 1 No. 2	—	—	10 —	14 —	9×6 —	420 —	4½×6 —	420 —	— —	— —	— —	— —	— —	— —	Sinking.
Cadzow Coal Co. (Limited).	Cadzow	Do.	Do.	—	No. 1 No. 2 No. 3	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
Cadell, James, and Co.	Redford	Muiravonside	Stirling	Jas. Cadell	Broadhead	Main Coal	Long wall and stoop & room.	4	20	12½×5½	205	10×5	120	1	658	20	4,000	Fur.	F.	Fur. on surface.
Cadell, Henry	Grange	Carriden	Linlithgow	Do.	Acre and Level No. 4 Mines Nos. 3 and 5	Parrot, 6′ Do. Splint, Parrot	Long wall Do. Do.	19 10 12	57 30 42	6×6 7×6 8 & 9	660 900 220	9 9 8	150 130 120	1 — —	1,500 1,300 2,300	25 25 30	3,800 4,090 16,000	Fur. Fur. Fur.	F. F. F.	
Callendar Coal Co.	Callendar	Falkirk	Stirling	Thos. Anderson	No. 2 No. 3 No. 4 No. 5 No. 6	Coxrod, 3′ Do. 2′ 6″ Do. & Splint, 3′ Do. 2′ 3″ Do.	Do. Do. Do. Do. Do.	41	130	7×5 6×5 4×6 5×5 9×5	75 120 156 Mine 90	5×5 12×5 6×5 10×5 5×3	75 120 192 84 120	— — — — 1	600 450 730 360 70	16 25 25 16 18	6,000 8,000 7,000 1,500 9,000	Fur. Fur. Fur. Fur. Fur.	N.F. N.F. N.F. N.F. N.F.	
Campbell, Archd, & Co.	Peatpots	New Monkland	Lanark	And. Wilson	No. 1	Drumgray	Do.	4	19	7½×4½	70	4½×5	70	1	200	24	5,500	Fur.	N.F.	
Carron Co.	Carron Hall	Larbert	Do.	Jas. Clelland	Burn William No. 5	Coxrod Do. and Main Main	Do. Do. Do.	9 18 7	69 135 9	13×5 9×7 11	141 381 240	14×5 14×7 11	282 381 381	— — —	1,540 1,716 1,672	9 16 20	3,039 6,000 3,800	Fur. Steam Steam	N.F. N.F. N.F.	Fur. on surface.
Do.	Kinnaird	—	—	Do.	No. 6	Crow	Do.	6	28	8	78	9	78	—	528	12	3,000	Fur.	N.F.	
Do.	Shieldhill	Falkirk	Stirling	Peter Mitchel	No. 6	—	—	10	55	10	216	10	216	—	1,690	16	4,000	Fur.	N.F.	
Do.	Blairhall	Culross	Perth	Alex. Clelland	No. 3	—	Do.	4	13	14×5	198	8×6	498	—	550	16	2,800	Fur.	N F.	No. 2, Blairhall upcast.

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Christie, Robt.	Kilmux	Kennoway	Fife	Robt. Forrester	No. 1	Six feet	Long wall	7	25	13½×4½	420	9×4½	342	2	1,440	16	4,800	Fur.	N.F.	No. 3 stopped.
					No. 3			—	—	—	—	—	—	—	—	—	—	—	—	
Christie, John	Milnwood	Bothwell	Lanark	Wm. Easton	No. 1	Virtuewell, 2′ 4″	Do.	—	—	4×5	147	5×7	147	—	101	12	3,820	Nat.	F.	Not working.
					No. 4	Pyotshaw, 4′ 4″	Do.	—	—	8½×5	362	16×5	430	2	1,500	17	7,680	Fur.	F.	
					No. 5	Do.	Do.	5	21	8½×5	362	16×5	430	—	1,250	17	790	Fur.	F.	
					No. 5	Main	Do.	6	34	8½×5	362	16×5	430	—	2,550	16	4,560	Fur.	F.	
					No. 5	Splint	Do.	6	52	8½×5	450	16×5	430	—	1,680	14	3,710	Fur.	F.	
Clerk, Sir G., Bart.	Brunstane	Penniculk	Edinburgh	Alex. Coutts	—	North Coal	Do.	3	18	9×5	200	6×4	24	—	900	24	—	Fur.	N.F.	
Cochrane, N., & Co.	Cornsilloch	Dalserf	Lanark	Abraham Thomson.	Cornsilloch	Ell, 4′ 3″	Stoop and room	11	65	8×5½	492	12×5½	516	1	1,700	45	19,600	Fur.	F.	
					Millburn	Main	Do.	11	70	13×5½	180	—	—	2	1,580	42	27,500	Fur.	F.	
					Skellyton	Do.	Do.	7	45	—	—	10×5	78	1	1,780	40	21,200	Fur.	F.	
Cluny Coal Co.	Cluny	Kirkcaldy	Fife	Arch. Bowman, jun.	No. 1	Lochgelly splint	—	4	18	8½×5½	312	4½×5½	306	—	270	—	2,000	Nat.	N.F.	Sinking.
					No. 2	—	—	4	6	10×5	222	10×5	222	—	—	—	—	—	—	
Coltness Iron Co.	Pather	Cambusnethan	Lanark	Jno. Scott	Pather, No. 3	Splint, 4′ 6″	Stoop and room	12	94	17×5½	250	8×6	250	—	1,300	42	16,000	Fur.	F.	
Do.	Garrion Gill	Do.	Do.	Do.	No. 1	Main, 4′ 3″	Do.	7	77	13×5½	102	—	—	—	1,500	30	16,000	Fan	F.	"Guibal" 15′×5′.
					No. 1	Splint	Do.	—	—	—	192	8	300	1	1,700	60	20,000	—	F.	
					No. 3	Do. 4′ 3″	Do.	4	20	14×5½	144	14×5½	120	—	600	28	12,000	Fur.	F.	
					No. 5	Splint	Do.	7	50	13×5½	192	8	300	—	1,400	50	—	Fan	F.	Fan at No. 1.
					No. 6	Main, 5′ 6″	Do.	10	126	—	228	—	—	1	700	48	—	Fur.	F.	
					No. 6	Splint, 5′ 6″	Do.	—	—	—	330	—	—	—	—	—	—	—	—	
					No. 7	Do.	Do.	8	85	14×5½	480	14×5½	324	1	600	36	—	Fur.	F.	
					No. 8	Splint, 5′ 6″	Do.	7	58	14×5½	120	14×5½	324	—	500	48	—	Fur.	F.	Fan.
					No. 9	Do. and Main	Do.	7	43	5×5½	300	5×5½	300	1	2,000	48	—	Fur.	F.	
Do.	Coltness Iron Works.	Do.	Do.	W. W. Muir	Greenhead, No. 3	Main	Do.	7	36	13×5½	369	5½×3	405	—	—	50	3,700	Fur.	F.	
					Do. Do.	Splint, 5′	Do.	3	38	13×5½	369	5½×3	405	—	2,300	50	3,600	Fur.	F.	
					Do. No. 5	Ell, 7′ 6″	Do.	11	102	14×6	282	4×6	324	1	1,300	70	12,400	Fur.	F.	
					Crindledyke, No. 2.	Virtuewell	Long wall	5	65	9×5½	161	5½×5	177	—	1,770	28	8,500	Fur.	F.	
										12×5	116	5½×5	177	—	1,900	28	7,000	Fur.	F.	
					Stonecraigs, No. 1.	Ell	Stoop and room	9	81	13×5	118	4×6	140	—	2,960	70	10,000	Fan	F.	"Waddle" 15′ dia.
					No. 2	Do. 9′ 6″	Do.	10	52	13×5	144	7×4½	96	—	1,400	70	14,450	Fur.	F.	
					No. 4	Main, 4′ 9″, Pyotshaw, 2′ 9″.	Do.	6	48	14×6	140	6×4	140	—	860	42	3,500	Fan	F.	
					Royal George, No. 2.	Ell	Do.	3	20	13½×5	88	7	60	—	560	70	12,500	Nat.	F.	
					No. 3	Splint	Do.	7	95	16½×6	104	7	115	1	880	50	18,000	Fur.	F.	
Cowdenbeath Coal Co.	Cowdenbeath	Beath	Fife	Rich. Nisbet	No. 2	Splint, 4′ 4″, 5 feet, 5′ 6″.	Long wall	20	78	8×5	480	5×5	480	—	968	30	14,000	Fur.	N.F.	
					No. 3	Splint, Mynheer, 3′ 4″.	Stoop and room	22	101	14×5½	648	5×5	480	—	1,782	30	13,840	Fur.	N.F.	
					No. 8	14 feet	Do.	12	98	9×6	540	6×5	540	—	1,190	60	13,500	Fur.	N.F.	
					No. 8	Splint, Parrot	Do.			11×10	430				660	60	11,840	Fur.	N.F.	
Cowie, Geo., and Sons.	Rochsolloch	New Monkland	Lanark	Robt. Colquhoun	No. 6	Kiltongue, 4′ 5″	Long wall	17	63	9×5	226	5×3½	241	1	950	34	10,213	Fur.	F.	
					No. 6	Upper Drumgray	Do.			9×5	257	5×3½	272	1	740	30	10,113	Fur.	F.	
					No. 7	Kiltongue and do.	Do.	9	36	10×5	226	5×4	238	1	880	34½	11,968	Fur.	F.	
					No. 7	Upper Drumgray	Do.	—	—	10×5	256	5×4	268	1	1,425	30	8,768	Fur.	F.	
					No. 8	Do.	Do.	17	65	15×5½	169	5½×5½	193	1	638	35	21,512	Fur.	F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Crofthead Coal Co.	Crofthead	Whitburn	Linlithgow	David Spence	No. 1 No. 2 No. 3	Lower Drumgray Do. Shott's Ball	Long wall Do. Do.	4 2 2	41 10 10	10×5 4½×6½ 4×4½	60 240 78	4×4 10×6½ 4×4½	52 240 78	1 – –	760 400 250	14 36 14	6,800 10,000 2,400	Fur. Fur. Fur.	N.F. N.F. N.F.	
Craignethan Gas Coal Co.	Craignethan	Lesmahagow	Lanark	William Forrest	Craignethan	Gas Coal	Do.	16	63	9×5	600	6½×2½	324	–	1,300	20	5,500	Fur.	N.F.	Downcast is a mine dipping 1 in 8.
Darling, G. and J.	Guildhouse	Carnwath	Do.	Wm. Hogg	No. 1	Do.	Do.	—	—	11×5	246	10×5	30	–	307	10	864	Fur.	N.F.	Stopped.
Darling, Wm., (Trustees of).	Cleugh Gas Coal Works.	Carnwath	Do.	Do.	No. 1 No. 4 No. 5 No. 6 No. 6 No. 7 No. 8	Do – Gas Coal Do. 2′ 2″ Main Coal – Gas Coal	Do. Long wall Do. Do. Long wall	6 — 9 4 4 — 3	52 — 50 9 9 — 36	— 12×5 13½×5½ 18×5½ 18×5½ — —	— 84 312 270 144 — —	13×5 — — — — 11×5 12×5	156 — — — — 162 87	2 — 2 1 – – 1	435 — 556 215 280 — 340	14 — 18 25 30 — 12½	9,584 — — 2,560 1,848 — 2,560	Fur. — Fur. Fur. Fur. — Fur.	N.F. — N.F. N.F. N.F. — N.F.	Aired from Nos. 4 and 5. Aired from No. 6.
Darling, G. E., and Brothers.	Woodmuir	Carnwath	Lanark	James Hogg	No. 2	Woodmuir Main	Do.	5	22	11×6	168	10×5	168	–	645	20	—	Nat.	N.F.	
Deans and Moore	Carberry	Inveresk	Edinburgh	Jas. Henderson	No. 1	Great Seam, 9′	Stoop and room	29	80	16×5	420	12×5	420	–	6,000	60	30,000	Fan	N.F.	"Waddle," 16′ dia.
Do.	Penston	Gladsmuir	Haddington	Do.	No. 1 Sir Roger	Splint –	Long wall Do.	30	112	15×5	150	15×5	150	–	1,500	50	15,000	Fur.	N.F.	
Do.	Elphinstone Tower.	Tranent	Do.	Do.	Bellyford	Parrot, Splint, and 5′.	Do. Stoop and room	9	101	6×5½	Mine	15×5	120	–	476	20	12,000	Fur.	N.F.	
Do.	Pencaitland	Pencaitland	Do.	Do.	Valley	Splint	Long wall	16	74	16×5	132	12×5	130	–	2,000	20	13,020	Fur.	N.F.	
Denend Coal Co.	Denend	Auchterderran	Fife	Jno. McIntosh	No. 1 No. 2	Lochgelly, Splint, 14′, and Smithy. –	Do. Do.	9 8	41 27	14½×5½ 14½×5½	432 426	13½×5½ 13½×5½	258 258	– –	2,150 —	20 20	5,200 —	Steam jet. Steam jet.	N.F. N.F.	
Dick, James	Knownoble	Shotts	Lanark	James Dick	No. 1 No. 1 No. 2	Ell, 5′ 6″ Virgin and Virtuewell, 1′ 10″. Ell, 5′ 6″ Main, 4′	Stoop and room Long wall Stoop and room Do.	16 6	22 28 30	5×4 6×4 6×4	36 336 318	5×4 6×4 6×4	36 336 318	– – –	550 600 700 350	16 16 16 16	6,050 2,780 2,334 2,765	Fur. Fur. Fur. Fur.	N.F. F. F. F.	
Dick, Robert	Wyndedge	Bothwell	Do.	Robt. Dick	No. 1 No. 4	Splint Virtuewell	Long wall Do.	4 6	4 21	6×5½ 5×5½	168 102	5½×5 5×5½	168 102	– –	200 350	16 16	2,000 4,000	Fur. Fur.	F. F.	
Dixon, William, (Limited).	Fauldhouse	Whitburn	Linlithgow	F. Duncan	No. 5 Nos. 7 and 11 No. 10	Big Coal Do. Shotts Ball	Do. Do. Do.	— 12 4	— 45 61	5×4 18×6½ 6×5½	132 270 270	5×4 7×6½ 6×5½	132 252 270	– 1 1	416 900 815	28 48 20	2,000 12,275 7,150	Fur. Fur. Fur.	N.F. N.F. N.F.	
Do.	Cleland	Bothwell	Lanark	Chas. Thomson	No. 3 No. 7 No. 7	Ell Main and Pyotshaw Splint	Stoop and room Do. Long wall	14 10 9	72 30 24	11×5½ 11×5½ 11×5½	330 258 330	15×5½ 15×5½ 15×5½	222 222 237	1 – –	580 666 830	33 36 40	18,876 8,876	Fur. Fur.	F. F.	
Do.	Carfin	Do.	Do.	Do.	No. 1 No. 2 No. 3 No. 3 Store Pit	Do., 4′ 6″ Ell Coal, 6′ Main and Pyotshaw Virtuewell, 5′ 6″ Do.	Do. Stoop and room Do. Long wall Do.	18 10 7 15 10	112 57 30 96 44	15×5½ 15×5½ 15×5½ 15×5½ —	480 330 450 660 —	— 10×5½ — — 15×5	— 330 — — 546	1 – – 1 1	1,546 510 1,540 1,100 630	20 27 40 20 20	14,612 10,057 5,257 — 18,476	— Fur. Fur. — Fur.	F. F. F. F. F.	Fur. in No. 2 pit. Store pit aired from No. 3 Carfin.

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Dixon, William, (Limited).	Blantyre	Blantyre	Lanark	James Watson	No. 1	Ell	Stoop and room	15	66	24×8	620	16×8	680	1	900	25	10,000	Fur.	F.	
					No. 1	Main, 4′ 2″	Long wall	38	215	24×8	680	16×8	780	1	1,600	24	38,000	Fur.	F.	
					No. 2	Splint, 7′ 6″	Stoop and room	21	130	24×8	780	16×8	780	1	2,030	25	28,000	Fur.	F.	
					No. 3	—	—	12	18	24×8	420	—	—	—	—	—	—	—	—	Sinking.
					No. 4	—	—	14	18	24×8	384	—	—	—	—	—	—	—	—	
					No. 5	—	—	7	12	10	300	—	—	—	—	—	—	—	—	
Do.	Wilsontown	Carnwath	Do.	J. Nimmo	No. 1	Main Coal	Stoop and room	7	32	7×7	132	7×4½	132	—	400	20	3,000	Fur.	N.F.	
					No. 2	Do.	Do.	5	30	—	130	—	130	—	400	20	1,700	—	—	
					No. 3	—	—	15	18	—	—	—	—	—	—	—	—	—	—	
Drumgray Coal Co. (John Rankine).	Drumgray	New Monkland	Do.	Jno. Murray	No. 4	Drumgray	Long wall	5	30	8×5½	264	4×5½	282	1	385	6	3,500	Fur.	N.F.	
Do.	Brownrigg	Do.	Do.	Do.	No. 10	Virtuewell	Do.	6	80	8×5½	132	4½×5½	150	1	850	7	1,800	Fur.	N.F.	
Do.	East Greengairs	Do.	Do.	Do.	No. 9	Do. 2′ 6″	Do.	8	87	10×5½	168	5×5½	138	1	2,700	7½	1,650	Fur.	N.F.	
					No. 13	Do.	Do.	3	20	5×5½	81	5×5½	96	1	300	8	2,600	Fur.	N.F.	
					No. 12	—	—													
Dunlop, Colin, & Co.	Quarter	Hamilton	Lanark	Robt. Spiers, jun.	No. 1	Main, 4′	Stoop and room	10	80	5×5	132	5×5	131	1	3,200	48	11,000	Fur.	F.	
					No. 4	Ell, 5½′, Splint, 5′.	Do.	4	30	9×5½	384	6×5½	276	—	1,600	48	6,105	Fur.	F.	
					No. 5	Main, 4′	Do.	5	50	8×5½	114	4½×5½	192	—	1,500	30	3,100	Fur.	F.	
					No. 5	Splint, 5′	Do.	5	36	12×5½	192	4½×5½	192	—	2,750	55	10,000	Fur.	F.	
					No. 6	Ell, 5′ 6″, Main	Do.	7	35	7×5½	450	6×5½	300	—	600	58	6,100	Fur.	F.	
						Splint	Do.		—	—	—	—	—	—	—	—	—	—	—	
					No. 7	Ell, 5′ 6″	Do.	11	73	11×6	528	9½×6	384	—	2,200	75	9,120	Steam jet.	F.	
						Splint	—		—	—	—	—	—	—	—	—	—	—	—	
Do	Auchlochan	Lesmahagow	Do.	Do.	No. 1	Do.	Long wall	10	68	13×5	180	4½×5½	174	1	560	12	3,500	Fur.	N.F.	
Dunn & Ure	Udston	Hamilton	Do.	Isaac Haddow	No. 1	Ell	Stoop and room	12	32	7×6	750	7×6	768	1	780	40	10,000	St. jet	F.	
					No. 2	—	—	3	3	9×6	90	9×6	90	—	—	—	—	—	—	Sinking.
Dunn, Brothers	Newlands	Bothwell	Do.	David Dunn	No. 3	Main, Pyot	Stoop and room	—	—	—	—	—	—	—	—	—	—	—	—	
						Shaw, Splint	Long wall	35	180	19×6	672	17×6	468	1	5,126	20	16,874	Fan	F.	
Durie and Nisbit	Elphinstone	Tranent	Haddington	Robt. Henderson	Fleets	Great, 9′ 6″	Stoop and room	19	60	12×5½	216	5½×3½	216	1	2,125	30	6,200	Fur.	N.F.	
					Catherine	Splint and Parrot, 5′ 6″.	Do.	11	74	11×5½	144	4×4	37	1	1,512	23	4,425	Fur.	N.F.	
							Long wall													
Dimmock, J. & R.	Headlesscross	Whitburn	Linlithgow	Jno. Hunter	No. 1	Under Drumgray	Do.	—	—	7×5	120	5×5	138	—	—	—	—	—	—	Stopped.
Dimmock, Bros.	Balcastle	Slamannan	Stirling	David Brown	No. 2	Under Drumgray	Do.	2	12	10×5	168	15×5	360	1	300	16	7,000	Fur.	N.F.	
Dryflat Coal Co. (Pettigrew and Spencer).	Dryflat	New Monkland	Lanark	Wm. White	No. 2	Virtuewell	Do.	—	—	12×5	180	10×5	72	—	—	—	—	—	—	Abandoned.
					No. 3	(Ironstone).	Do.	—	—	5×5	66	5×5	70	—	—	—	—	—	—	
Drumshangie Coal Co.	Drumshangie	Do.	Do.	Andrew Brown	No. 1	Virtuewell	Do.	8	15	16×5½	120	18×6	72	—	630	42	10,000	Fur.	F.	
					No. 3	Do.	Do.	10	20	16×5½	120	18×6	72	—	630	42	10,000	Fur.	F.	
Darling, James	Calderhead	Shotts	Do.	Jas. Darling	High Pit	Shotts Gas	Do.	—	—	4×4	Mine	11×5	84	—	800	7	2,400	Fur.	N.F.	Stopped.
					Low Pit	Do.	Do.	8	34	8×5½	69	5½×4	84	—	460	7	2,140	Fur.	N.F.	
Eaglesham, J.	Polton	Cockpen	Edinburgh	Hugh Rigg	No. 1	Rough	Do.	2	6	5½×7½	120	5½×5	132	—	110	14	1,110	Nat.	N.F.	
					No. 2	Rough and Splint	Do.	14	40	6	312	6	312	—	810	48	2,400	Nat.	N.F.	
						Rough and Jewel	Do.	4	21	5	180	5	180	—	310	25	1,197	Nat.	N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Erskine, W. C. C.	Kinnedder	Dunfermline	Fife	—	Lady Louisa	Splint, 20″.	Long wall	2	3	9×4	56	—	—	—	—	—	—	—	—	Just opening up.
Ferguson, Jas. (Trustees of late.)	Auchinheath	Lesmahagow	Lanark	W. Forrest	Old Hall	Lesmahagow Wee Gas.	Do.	18	105	6×4½	Mine	8×4	144	–	2,360	18	4,300	Fur.	N.F.	
Fife Coal Co. (Limited).	Beath & Blairadam	Beath	Fife	John Beveridge	No. 1 Blairadam.	Five feet	Do.	8	24	8×6	—	—	—	–	1,030	20	22,046	*	N.F.	No. 1 Blairadam is a mine 1,200 feet in length, dipping 1 in 2¼. * Exhaust steam from underground engine.
					No. 1 Beath	Do.	Do	19	80	—	—	9×5½	390	1	1,700	20	15,900	—	—	
					Lindsay	Main Coal	Do.	10	22	16×8½	270	—	—	–	—	—	2,500	Fan	N.F.	
					No. 2 Blairadam.	Five feet	Do.	13	29	13×5½	174	5×5	30	–	450	24	5,054	Nat.	N.F.	
					No. 3	Main and Jersey	Do.	19	93	16×8½	270	14×5½	150	3	600	20	22,308	Fan	N.F.	Fan 18′ × 5′, 40 strokes per minute.
Forrester, Robt.	Greendykeside	New Monkland	Lanark	Alex. Park	No. 3	Splint	Do.	12	33	12×5	102	12×5	120	1	682	17	4,300	Fur.	F.	
Do.	Roughrigg	Do.	Do.	Do.	No. 4	Do.	Do.	3	20	12×5	216	4½×5	240	–	—	—	—	—	—	Abandoned.
					No. 7	Do.	Do.	4	50	12×5	216	4½×5	168	1	1,516	19	3,000	Fur.	F.	
					No. 8	Do.	Do.	3	42	7½×5	150	4½×5	168	–	1,583	16	2,700	Fur.	F.	
					No. 9	Do.	Do.	4	41	12×5	138	4½×5	168	–	1,380	19	2,900	Fur.	F.	
Do.	Dunmore	Airth	Stirling	—	No. 2	Two feet coal, 26″	Do.	—	—	7×5	162	5×5	186	1	420	16	—	Fur.	N.F.	Stopped temporarily.
Frazer, Wm.	Lethans	Saline	Fife	Wm. Frazer, jun.	No. 1	Halbeath Splint, 3′ 7″	Do.	11	35	4×6	540	6	78	1	360	36	8,000	Fur.	N.F.	
Frew, James (Trustees of late.)	Raploch	Dalserf	Lanark	James Frew	Raploch	Do. Main	Stoop and room	17	72	7¾×5	231	5×5	231	–	3,388	31	13,000	Fur.	N.F.	
Ferrier and Strain	Airdrie and Chapelside	New Monkland	Do.	Hugh Paterson	No. 1	Virtuewell	Long wall	8	13	—	—	12×5	240	–	966	18	3,080	Fur.	F.	
					No. 1	Kiltongue	Do.		31	—	—	—	420	–	2,310	22	7,040	Steam	F.	
					No. 2	Drumgray, 1′ 10″	Do.	16	23	12×5	360	—	—	–	950	18	2,500	Do.	F.	
					No. 2	Kiltongue, 3′ 6″	Do.		34	—	360	—	—	–	2,316	22	7,040	Do.	F.	
					No. 3	—	—	—	—	—	—	—	—	–	—	—	—	—	—	
Forsyth, Wm.	Roughcraig	Do.	Do.	Wm. Forsyth	No. 1	Do.	Do.	5	28	8×5	180	5×5	180	–	600	20	6,000	Steam	F.	
Foulshiels Coal Co.	Foulshields Stoneyburn	Whitburn Do.	Linlithgow Do.	Arch. Ferguson Do.	No. 1 No. 1	Upper and Main Main	Do. Do.	11 —	25 —	— —	240 180	— —	240 180	1 –	170 130	14 21	5,000 —	Fur. —	N.F. —	Not working.
Gartness Mineral Co., Limited.	Gartness	New Monkland	Lanark	Arch. R. Ormiston	No. 1	Virtuewell	Long wall	3	21	10½×5½	342	5×5½	342	–	600	22	2,750	Fur.	F.	
					No. 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Gibb, Walter	Newarthill	Bothwell	Lanark	W. Gibb	No. 1	Ell Coal	Stoop and room	3	8	10×5½	156	13×5	180	–	400	36	8,000	Nat.	N.F.	
Gibb, McIntyre, & Ancell.	Shaws	Shotts	Do.	T. Gibb	No. 3	Virtuewell	Long wall	4	17	8×5	60	5×3	60	–	200	9	2,800	Fur.	N.F.	
Gemmell, Jas.	Auchingray	New Monkland	Do.	Jas. Gemmell	No. 1	Johnstone	Do.	3	15	6×5½	87	5×5½	87	–	600	30	3,300	Fur.	N.F.	
Do.	West Longrigg	Do.	Do.	Do.	Nos. 1 and 2	Splint	Do.	11	69	6×5	54	5×5	66	1	250	30	9,000	Fur.	N.F.	
		Do.	Do.	Do.	No. 3	Do.	Do.	3	11	8×5	84	4½×5	84	–	228	30	9,000	Nat.	N.F.	
Glasgow Iron Co.	Netherton	Cambusnethan	Lanark	J. C. Muir	No. 4	Ell Coal, 9′ Main, 5′	Stoop and room Do.	15	64	12×5½ —	570 —	— —	— —	– –	540 3,300	16	6,815	Fur	F.	No. 7 is the upcast.

List of Coal Mines, with the Mode of Working, Ventilation, &c. during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated: Parish.	Where situated: County.	Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed: Above Ground.	No. of Persons employed: Below Ground.	Size and Depth of Downcast and Upcast Shafts. Downcast. Size in Feet.	Downcast. Depth in Feet.	Upcast. Size in Feet.	Upcast. Depth in Feet.	Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
															yards.	feet.				
Glasgow Iron Co.	Green	Cambusnethan	Lanark	J. C. Muir	No. 7	Main, 5′	Stoop and room	10	45	—	—	11×5½	372	–	2,200	16	6,193	Fur.	F.	Air from No. 4.
Do.	Overjohnstone	Dalzell	Do.	Do.	No. 8	Do., 4′ 6″ Pyotshaw, 2′ 9″ Ell	Do.	8	70	5½×5½	342	—	—	–	1,640	16	6,128	Fur.	F.	No. 9 is the upcast.
						Splint, 3′ 6″	Do.	8	26	5½×5½	420	—	—	–	2,420	16	6,389	Fur.	F.	No. 5 is the upcast.
Do.	Shieldmuir	Cam'nethan	Do.	Do.	No. 9	Main	Do.	4	20	4½×5½	324	4½×5½	246	–	1,460	16	6,543	Fur.	F.	Air from No. 8.
						Splint	Do.	8	60	—	—	—	—	–	2,000	16	6,335	Fur.	F.	
Do.	Meadowhead	Dalzell	Do.	Do.	No. 5	Main, 4′ 4″ Pyotshaw, 3′	Do.	8	35	—	—	11×5½	402	–	1,600	16	6,144	Fur.	F.	Air from No. 10.
						Humph	Long wall					—	—	–	1,100	16	7,072	Fur.	F.	
						Splint	Stoop and room					11×5½	450	–	1,000	16	4,875	Fur.	F.	
Do.	Ravenscraig	Do.	Do.	Do.	No. 6	Main, 5′	Do.	13	37	6×5½	402	5½×5½	420	–	2,750	16	6,461	Fur.	F.	
Do.	Netherjohnstone	Do.	Do.	Do.	No. 10	Do.	Do.	15	114	12×5½	450	—	—	1	2,200	16	8,142	Fur.	F.	No. 5 is the upcast.
Do.	Fairholm	Hamilton	Do.	Robt. Wilson	–	Do., 4′ Splint, 5′ 2″	Do.	17	90	8×5½	180	5×4½	180	–	1,630	16	9,000	Fur.	N.F.	
Do.	Gilmerton	Liberton	Edinburgh	Jno. McGowan	No. 24	No. 1 Ironstone North Greens	Long wall Do.	16	51	9×5	540	12×6	480	1	550	27	10,352	Nat.	N.F.	
Do.	Roslin	–	–	Do.	No. 34	Gas Coal and Gt. Seam.	–	11	21	7×3½	66	12×6	234	1	136	24	5,000	St. jet	N.F.	
Goodall, Bros.	Begg	Auchterderran	Fife	Wm. Goodall	Ronald	Black and Parrot	Do.	9	68	9×5	246	9×5	150	1	700	16	6,000	Fur.	N.F.	
Goodall, J.	Cardenden	Do.	Do.	J. Goodall	No. 5	Lochgelly Splint	Do.	8	37	14×5	285	9×5	222	1	2,808	16	3,500	Fur.	N.F.	
					No. 6	14 feet	Do.	5	23	12×5	132	9×5	132	–	1,628	13½	2,700	Fur.	N.F.	
					No. 8 Den	Smithy	Do.	4	18	4×3	16	Mine	—	–	550	15	2,600	Nat.	N.F.	
Grangemouth Coal Co.	Grangemouth	Bothkennor	Stirling	Wm. Swann	Zetland	–	–	32	—	—	—	6′ 10″	240	–	—	—	—	Fan.	N.F.	Pumping and upcast shaft only.
					Lady	Splint and Coxrod	Stoop and room	8	45	12	276	—	—	–	1,100	16	8,265	—	N.F.	"Waddle" Fan, 15 feet dia., at Zetland Pit.
					Do.	Thin Coal	Long wall	—	7	12	340	—	—	–	670	19	3,780	—	N.F.	
					Barony	Splint and Coxrod	Do.	8	52	12	246	—	—	–	766	24	7,200	—	N.F.	
					Do.	–	–	—	33	—	320	—	—	–	640	18	6,500	—	N.F.	
					Palace	Do. do. 3′ 4″	Stoop and room	10	50	12	180	—	—	–	670	24	6,897	—	N.F.	
								29			250	—	—	–	630	20	5,040	—	N.F.	
					Towncroft	Do. Crow	Long wall	11	68	9	240	9	244	–	474	20	5,000	Fur.	N.F.	
									12		200	—	204	–	230	16	3,500	—	N.F.	
Gray, Thos.	Chapel	Cam'nethan	Lanark	W. Turner	No. 12 and 6	Kiltongue	Do.	11	70	6×5½	200	6×5½	200	–	600	30	12,000	Fur.	F.	
						Virtuewell	Do.	—	—	—	—	—	—	–	—	—	—	—	—	
Gilchrist, Wm.	Stockwell	Carluke	Lanark	W. Gilchrist	No. 1	Braidwood "Wee," 18 to 20 inches.	Do.	3	24	4×3	Mine	4½×5½	90	–	880	—	3,000	Fur.	N.F.	
Gray and Paul	Climpy	Carnwath	Do.	Walter Annan	No. 2	Climpy Main	Do.	6	40	12×5½	216	5×5½	228	1	1,800	42	4,150	Nat.	N.F.	
	Wilsontown	Do.	Do.	Do.	No. 3	Gas Coal	Do.	4	46	8×5	174	4×5	182	1	1,460	20	2,400	Fur.	N.F.	
					No. 6	Do.	Do.	—	—	7×5	78	4×5	84	–	—	—	—	—	—	
					No. 7	Do.	Do.	2	26	9×6	243	4×6	252	1	466	24	3,800	Fur.	N.F.	
					No. 8	Do.	Do.	4	30	10×6	300	6½×6	313	1	200	28	8,000	Fur.	N.F.	
					No. 9	Do.	Do.	7	45	9×6	390	7×6	399	1	500	20	4,600	Nat.	N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated: Parish.	Where situated: County.	Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed: Above Ground.	No. of Persons employed: Below Ground.	Size and Depth of Downcast and Upcast Shafts. Downcast. Size in Feet.	Downcast. Depth in Feet.	Upcast. Size in Feet.	Upcast. Depth in Feet.	Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
															yards.	feet.				
Grier, Mrs. Thomas	Baldridge	Dunfermline	Fife	Adam Hunter	Tom	Eight Feet	Long wall	6	23	10	48	6½	60	–	600	24	7,000	Fur.	N.F.	
Grieve, J. and C.	Prestonlinks	Prestonpans	Haddington	J. Grieve	Prestonlinks	Great Seam	Stoop and room	9	12	6×5	400	5×4½	400	–	1,450	18	4,160	Fur.	N.F.	
						Fire-clay			17	4×4	240	5×4½	240	–	600	16	2,790	Fur.	N.F.	
Grieve and Nasmyth.	Donibristle	Aberdour	Fife	Alex. Nasmyth	No. 12	Main Coal & Parrot	Long wall	10	33	6½×4	240	5×5	37	–	2,216	20	7,000	Fur.	N.F.	
					Isabella	Five Feet	Do.	14	45	6×4	21	5×5	45	–	1,080	20	12,000	Fur.	N.F.	
						Blawlowan	Do.			9×5	240	5×5	42	–	850	20	10,000	Fur.	N.F.	
					Marion	Main Parrot	Do.	20	62	9×5	303	9×5	303	–	900	24	9,600	Nat.	N.F.	
					James	–	–	–	–	9×5	96	5×5	96	–	–	–	–	–	–	
Grierson and Co.	Glebe	Douglas	Lanark	T. Grierson	No. 1 Mine	–	Stoop and room	4	20	9×6	180	4×4	–	–	240	–	–	–	N.F.	
Glasgow Steam Coal Co.	Avonhead	New Monkland	Lanark	Robt. Muir	No. 1	Drumgray	Long wall	8	20	5½×5	96	5½×5	96	–	700	25	20,000	Fur.	F.	Pit divided.
					No. 4	Virtuewell	Do.	6	15	5½×5	96	5½×5	96	–	400	27	22,000			
Horne, R. R.	Mosshall	Bathgate	Linlithgow	W. Anderson	Latchbrae	Wilsontown Main	Do.	8	14	5×5½	132	7×5½	132	1	440	50	1,200	Nat.	N.F.	Pit stopped.
Do.	Torbanehill	Do.	Do.	–	–	Main Coal	Do.	7	40	6½×5½	180	6½×5½	102	–	880	20	5,040	Fur.	N.F.	
Do.	Knowton	Shotts	Lanark	Jas. Williamson	No. 1	Shotts Virgin	Do.	4	16	5×5½	60	5×5½	60	–	520	16	2,800	Nat.	N.F.	
Hamilton Coal Co.	Greenfield	Hamilton	Do.	James Hastie	No. 1	Ell Coal, 7′	Stoop and room	45	238	17×6	876	8×6	852	1	6,314	50	30,000	Fan	F.	"Waddle" fan, 30′ diam., 24″ cyl., and 4′ stroke. 60 strokes per min.
					No. 1	Splint, 3′ 9″	Do.							1	1,452	40	19,000	Fan	F.	
					No. 2	Main Coal, 4′	Do.	10	81	10×6	852	–	–	1	4,070	40	20,000	Fan	F.	
Hamilton, McCulloch, & Co.	Bog	Do.	Do.	Wm. Kirkwood	Nos. 1 and 2	Ell, Main, & Splint	Do.	42	234	21×6	606	11×6	606	3	3,600	66	53,720	Fur.	F.	
Do.	Home Farm	Do.	Do.	Do.	Nos. 1 and 2	Do. Do.	Do.	42	190	14½×6	450	10×6	450	3	2,670 800 1,700	36 44 34	20,058	Fur.	F.	
Hay, Matthew, and Sons.	Stanerigg	Slamannan	Stirling	Jno. McCulloch	No. 2	Coxrod	Long wall	6	40	10×5	60	10×5	96	–	1,034	20	8 770	Fur.	N.F.	
					No. 3	Do.	Do.	4	10	11×5	60	12×5	102	–	–	–	–	–	N.F.	
Haywood Gas Coal Co.	Haywood	Carnwath	Lanark	Jas. Robertson	Tashieburn	Gas Coal	Do.	2	11	5½×6	168	5½×5½	120	–	1,294	16	2,000	Fur.	N.F.	
					No. 2	Do.	Do.	6	28	13×5½	168	5½×5	180	–	1,100	29	7,000	Fur.	N.F.	
					No. 4	Do.	Do.	12	59	12½×6	462	5½×5	120	1	1,980	16	6,343	Fur.	N.F.	
					No. 5	Do.	Do.	3	17	12×5½	294	–	–	–	1,310	16	2,000	Fan	N.F.	Fan in main coal, 15′ dia.
					No. 5	Main Coal, 4′ 4″	Stoop and room	13	55	13×5½	456	12×5½	294	1	1,562	16	16,950	Fan	N.F.	
					No. 6	Do.	Do.	2	5	5×5½	300	5½×5½	312	–	880	15	8,674	Fur.	N.F.	
					No. 8	Gas Coal, 18″	Long wall	–	–	12×5½	287	5×5½	240	1	–	–	–	–	–	
					No. 8	Main Coal	Stoop and room	8	54	11½×5	90	5×5	99	–	1,321	18	11,623	Fur.	N.F.	
					No. 9	Do., 4′ 4″	Do.	3	22	6×5	42	11×5	120	–	1,144	16	8,700	Fur.	N.F.	
					No. 10	Gas Coal	Long wall	14	68	13×5½	456	13×5½	180	1	1,188	16	9,735	Fur.	N.F.	
					No. 11	Main Coal	Stoop and room	4	25	11×5½	84	15×5½	99	–	1,318	18	4,000	Fur.	N.F.	
Henderson, Wallace, & Co.	Halbeath	Dunfermline	Fife	C. A. Carlow	Eliza	Splint	Long wall	18	95	8½×6	576	8½×8	576	–	2,500	16	4,250	Fur.	N.F.	Pit divided.
	Cuttlehill	Do.	Do.	Do.	Old North	5 Feet	Do.	18	60	8×4½	168	12×5	216	1	1,900	17	10,000	Steam	N.F.	Old North upcast.
					Burn	Do.	Do.	10	60	13×5	408	8×6	444	–	2,800	18	5,000	Fur.	N.F.	
Do.	Kingseat	Do.	Do.	Do.	No. 1	Do. and Splint	Do.	16	100	13×5	456	–	–	–	1,200	20	7,800	Fur.	N.F.	
					Henderson	Splint, 4 feet and 8 feet.	Do.	26	135	–	–	8½×8	339	1	2,350	18	10,750	Fur.	N.F.	Henderson Pit is an upcast.
					Queen	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
					No. 3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Henderson, G. W. M.	Fordell	Dalgetty	Fife	Geo. Hogg	Cuttlehill, No. 9	Blawlowan	Long wall	8	27	$10\frac{1}{2}\times5\frac{1}{2}$	342	$6\frac{1}{2}\times6\frac{1}{2}$	282	1	918	33	10,800	Fur.	N.F.	
					Do. William	Splint	Do.	12	84	$10\frac{1}{2}\times5\frac{1}{2}$	342	$6\frac{1}{2}\times6\frac{1}{2}$	282	1	2,100	34	12,420	Fur.	N.F.	
						5 feet & Mynheer, 5′	Do.													
					Prathouse, No. 3	Blawlowan	Do.	8	21	10	120	10×5	132	–	1,850	33	5,130	Fur.	N.F.	
					Do. No. 4	Splint	Do.	10	54	12×5	282	6×5	384	–	4,500	22	3,000	Fur. &	N.F.	
						Mynheer, 3′	Do.								2,500	27	2,400	steam	N.F.	
						Blawlowan, 7′	Stoop and room								920	30	2,400	jet.	N.F.	
					Do. No. 5	Five Feet, 5′ 6″	Do.	5	28	10	120	10×5	132	1	1,215	28	6,800	Fur.	N.F.	
						Mynheer	Do.													
Hendrie, Jno.	Maryville	Bothwell	Lanark	Wm. Russell	No. 1	Main, 3′ 8″	Do.	13	54	15×6	510	6×6	510	1	1,000	40	9,420	Fur.	F.	
					No. 2	Splint	Do.	5	29	7×6	600	4×6	600	–	300	36	4,320	Nat.	F.	
Herd, Walter	Dunnikier	Kirkcaldy	Fife	Walter Herd	Isabella	3 feet, Smithy	Long wall	5	50	$8\times4\frac{1}{2}$	168	14×5	276	2	900	12	6,000	Fur.	N.F.	
					St. Clair	Rough	Do.	2	17	14×5	240	8×5	228	–	600	12	5,000	Fur.	N.F.	Abandoned.
					Lena	Black and Parrot	Do.	6	39	9×5	440	$4\frac{1}{2}\times5$	440	1	360	35	8,000	Fur.	N.F.	
Hood, Archd.	Dalhousie	Cockpen	Edinburgh	J. B. Johnstone	Dalhousie	Great Jewel	Do.	12	60	10	200	10	212	2	990	25	7,000	Fur.	N.F.	
						Rough	Do.													
					Whitehill	Jewel	Do.	16	91	10×6	90	8	90	2	1,760	24	10,000	Fan	N.F.	"Guibal" fan, 9′ dia., 4′ wide. 80 to 100 strokes per min.
						Parrot Rough	Do.													
Do.	Whitehill and Gorton.	Lasswade	Do.	John Begg	Engine	Great, 6′	Do.	53	—	$11\frac{1}{2}\times6$	240	$8\frac{1}{2}\times6$	225	3	2,200	30	18,000	Fur.	N.F.	
						Diamond	Do.	—	123	$8\frac{1}{2}$	240	10	224	–	—	—	12,000	Fur.	N.F.	
						Splint	Do.	—	—	—	—	—	—	–	—	—	—	—	N.F.	
Hyslop, Jonathan	Hawkwoodburn	Shotts	Lanark	T. P. Martin	Nos. 1 and 2	Shotts Gas	Do.	12	18	7×5	96	4×5	96	1	300	20	8,000	Fur.	N.F.	Stopped.
					Viewfield	Hurlett	Do.	4	15	$12\times4\frac{1}{2}$	372	4×4	15	–	200	19	4,000	Fur.	N.F.	Downcast is a mine dipping 1 in 4.
Hume and Mc Allister.	East Rochsoles	New Monkland	Do.	–	No. 1	Splint	Do.	—	—	5	21	5	36	–	—	—	—	—	—	Stopped.
Hudspith, Wm., and Co.	Beltonfoot	Cambusnethan	Do.	Henry Danks	No. 1	Ell Main	Stoop and room	5	20	$6\frac{1}{2}\times5\frac{1}{2}$	330	$4\frac{1}{2}\times5\frac{1}{2}$	330	–	400	30	5,000	Fur.	F.	
						Virtuewell	Long wall													
Hutchison, Jos.	Woodside	Dalserf	Do.	–	No. 2, Woodside	Ell, 5′ 6″, & Main, 4′	Do.	8	30	$10\times5\frac{1}{2}$	150	9×5	150	–	1,460	24	3,000	Fur.	F.	
					No. 3	Splint	Do.	7	34	8×6	388	6×6	400	1	1,500	16	6,000	Fur.	F.	
Hill Coal Co.	Hill	Muiravonside	Stirling	Colin Campbell	No. 2	Main	Stoop and room	5	10	$5\times5\frac{1}{2}$	150	$6\frac{1}{2}\times5$	150	–	50	27	—	—	—	Newly opened up.
Jackson, Thomas	Dalmacoulter	New Monkland	Lanark	Alex. Blackadder	No. 2	Kiltongue	Do.	7	26	$13\times5\frac{1}{2}$	198	7×5	162	1	466	32	7,000	Fur.	F.	
Do.	Stand	Do.	Do.	Do.	No. 3	Musselband Coal	Do.	5	28	$12\times5\frac{1}{2}$	126	$12\frac{1}{2}\times5\frac{1}{2}$	138	–	280	28	8,000	Fur.	F.	No. 4 is the upcast.
Johnstones and Rankine.	Longford	West Calder	Edinburgh	–	No. 1	–	–	—	—	—	—	—	—	–	—	—	—	—	—	Stopped.
					No. 2	–	–	—	—	—	—	—	—	–	—	—	—	—	—	
Johnstone and Torrance.	Edgehead	Dalkeith	Do.	–	–	–	–	4	14	—	—	—	—	–	—	—	—	—	—	Gin Pit.
Kerr, Thos., and Co.	Waterlands	Carluke	Lanark	Henry Stewart	No. 1	Kiltongue	Long wall	4	20	$9\times5\frac{1}{2}$	102	5×5	120	1	555	22	11,000	Fur.	N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Kerr and Mitchell	Glenclelland	Dalzell	Lanark	Thos. Borland	No. 1	Main	Stoop and room	19	95	6½×5½	412	5½×5½	338	1	1,363	50	11,500	Fur.	F.	
					No. 1	Splint	Do.			—	—	5×5½	338	-	1,230	30	9,000	Fur.	F.	
					No. 2	Ell	Do.	—	—	5½×4½	252	5½×3	280	-	1,100	45	5,000	Fur.	F.	
Lacour, Watson, and Simpson.	Eddlewood	Hamilton	Do.	G. D. Simpson	No. 1	Ell	Do.	15	15	13×6½	606	8×6½	606	-	70	22	20,000	St. jet	F.	
Lacour and Watson.	West Limerigg	Slamannan	Stirling	G. Pitcairn	No. 1	Splint, 2′ 2″	Long wall	8	12	7½×5½	360	4½×5½	360	-	1,160	10	3,300	Fur.	N.F.	
					No. 2	Do.	Do.	5	52	5×5	246	5×5	246	1	486	16	3,200	Fur.	N.F.	
Do.	Dykehead	Shotts	Lanark	Wm. Jeffrey	No. 1	Shotts Gas	Do.	4	27	6×4½	42	12×5	126	-	830	14	2,950	Fur.	N.F.	
					No. 2	Do.	Do.	3	28	7½×5½	132	5×5½	132	-	510	14	2,700	Nat.	N.F.	
Lassodie Coal Co.	Lassodie	Beath	Fife	J. Brownlie	No. 3	Splint	Stoop and room	10	37	19×6	420	12½×5½	270	-	1,000	20	3,500	Fur.	N.F.	
					No. 4	Splint	Do.	4	6	—	—	—	—	-	—	—	—	—	—	Sinking.
					No. 6	Do.	Do.	23	74	19×6	420	12×5½	270	1	700	25	7,500	Fur.	N.F.	
					No. 9	5 feet, Splint	Do.	27	129	—	—	—	—	1	1,000	20	—	Fur.	N.F.	
															900	18	—	Fur.	N.F.	
Lawson, A., & Co.	Chapel	Kirkcaldy	Fife	—	No. 1	—	—	1	5	8×4½	63	5×4	30	-	70	14	3,500	Nat.	N.F.	
Lochore and Capledrae Canel Coal Co. (Limited).	Lochore and Capledrae.	Ballingray	Fife	Wm. Waugh	Mary	Lochore Parrot	Long wall	11	79	13×5	138	6×5	138	1	500	35	8,700	Fur.	N.F.	
					Maggie	Do.	Do.	—	—	7×5	250	5½×5	250	-	66	45	8,000	Nat.	N.F.	New Pit. [Pit.
					West Mine	Do.	Do.	7	34	—	—	—	—	-	—	—	—	Fur.	N.F.	Aired from Mary
					East Mine	Waverley Cannel	Do.	—	—	6×7	150	5×5	42	1	480	10	6,400	Fur.	N.F.	Vertical dip of mines given in column for depth of downcast.
					Crosshill Mine	Do.	Do.	—	—	7×6	204	7×4	30	-	566	10	7,050	F.L.	N.F.	
										7×4½	109	7×4	30	-	560	10	5,100	F.L.	N.F.	
					No. 1	—	—	—	—	—	—	—	—	-	—	—	—	—	—	
					Capledrae Mine	Capledrae Cannel	Do.	10	28	8×5	460	12×5	180	-	1,720	40	9,200	Stm.	N.F.	
					Do. No. 3	—	—	4	8	—	—	—	—	-	—	—	—	—	—	Sinking.
Lesmahagow and Longlee Coal Co.	Blackwood	Lesmahagow	Lanark	Alex. McCallum	No. 1	Gas Coal	Do.	37	203	9½×6	444	6×4½	378	3	1,040	10	9,417	Fur.	F.	
					No. 2	Do.	Do.	2	—	6½×6	330	7×6½	330	-	—	—	—	—	—	
Do.	Garrelwood	Do.	Do.	Do.	No. 1	Do.	Do.	10	79	12½×6	86	6½×5	62	1	960	9	3,960	Fur.	F.	
Do.	Longlee	Dalserf	Do.	Do.	No. 1	Ell Coal, 6′	Stoop and room	9	36	14×5½	162	—	—	-	1,550	18	5,000	—	F.	
					No. 2	Splint, 5′ 1″	Do.	10	21	9½×6	426	6×4½	426	1	295	15	5,300	Fur.	F.	
					No. 2	Main, 4′ 10″	Do.	—	19	9½×6	328	6×4½	328	1	500	20	9,000	Fur.	F.	
Lothian, Marquis of.	Newbattle	Newbattle	Edinburgh	Thos. Stevenson	Shaws	Great	Long wall	6	36	9×5	198	8	222	-	1,654	32	8,775	Fur.	N.F.	
					Do.	Coronation	Do.							-	726	30	4,500	—	N.F.	
					Do.	Splint	Do.					10	90	-	1,760	33	4,290	—	N.F.	
					Do.	Parrot	Do.							-	2,994	42	31,500	—	N.F.	
					Lingewood	Great	Do.	199	444	10×11	900	10	240	-	4,812	33	16,500	Fan	N.F.	"Guibal" fan, 30 ft. dia., 10 ft. wide. Inlet 78·54 feet area. Speed 40 rev. per min.
					Do.	Splint	Do.			14×6	624	—	—	-	3,438	42	13,020	—	N.F.	
					Engine	Kaleblades	Do.							-	8,573	36	20,880	—	N.F.	
					Do.	Parrot	Do.							-	436	30	3,900	Fur.	N.F.	
					Bryans	Great	Do.	11	116	14×4½	360	8	220	-	1,324	30	12,090	Fur.	N.F.	
						Kaleblades	Do.							-	2,586	39	7,095	Fur.	N.F.	
						Splint	Do.							-	4,862	33	7,570	—	—	
						Parrot	Do.													

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size, and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Lothian, Marquis of.	Dalkeith	Dalkeith	Edinburgh	Thos. Stewart	No. 2, Cowden	Siller Willie	Long wall	33	127	14½×8½	630	9	192	—	2,900	17½	5,075	Fur.	N.F.	Furnace on surface.
					No. 3, Cowden	Do. Great Coronation.	Do.							—	1,020	14	3,200	Fur.	N.F.	
					No. 2, Smeaton	Jewel, Rough	Do.	13	68	17×4½	464	4½×4½	40	—	2,970	16	2,310	Fur.	N.F.	
Lochgelly Iron and Coal Co.	Lochgelly	Auchterderran	Fife	David Thomson	Eliza	Parrot, 4′, Splint, 5′ 6″.	Do.	34	175	21×6	600	9×6	300	4	1,818	25	37,500	Fur.	N.F.	
					Mary	Do. do.	Do.	12	70	18×6	150	14½×6	180	1	1,825	25	22,000	Stm.	N.F.	
					Foulford	—	Do.	22	106	12×8	432	8×8	432	2	1,550	35	20,000	Fur.	N.F.	
					No. 16	—	Do.	—	—	11×5	100	6½×5	45	1	720	35	11,400	Fur.	N.F.	
					No. 18	—	Do.	—	—	9×5	82	7×5	86	1	1,140	23	6,400	Fur.	N.F.	
					Lady	Splint, Parrot	Do.	39	177	9×5	250	6×5	426	—	—	—	—	Fan	N.F.	"Guibal" fan, 14′ dia.
					John	Do. do.	Do.	—	—	8×6	480	12×6	—	4	1,920	36	88,000	—	N.F.	
					Dora	—	Do.	10	28	16×6	600	8×5	492	—	—	—	—	—	N.F.	
Loganlea Coal Co.	Loganlea	West Calder	Edinburgh	Wm. Watson	No. 1	Wilsontown Main Coal.	Stoop and room	12	62	12×5	220	6×4	112	—	700	12	3,600	Fur.	N.F.	
Lumphinnans Iron Co.	Lumphinnans	Ballingray	Fife	Peter Cummings	No. 1	Splint and Parrot	Long wall	8	35	15×5½	612	10×5½	450	2	1,156	35	17,460	Fur.	N.F.	
					No. 1	Mynheer	Do.	6	23	15×5½	612	10×5½	450	—	472	40½	2,640	Fur.	N.F.	
					No. 1	Dunfermline Splint	Do.	4	14	15×5½	612	10×5½	450	—	966	48	4,937	Fur.	N.F.	
					No. 7	5 feet	Do.	17	61	15×5½	612	10×5½	450	1	1,190	50	16,219	Nat.	N.F.	
Lumsden, Thomas	Radernie	Kilconquhar	Do.	—	—	Drumhead	Parrot Splint and Black.	5	15	11×4½	156	8×4	60	—	—	—	—	—	—	
McAndrew, J., & Co.	Shields and Dalzell	Dalzell	Lanark	Jno. Whitelaw	Shields	Main	Stoop and room	15	28	12×6	420	6×4	420	1	1,000	24	10,000	Fur.	F.	
					Dalzell No. 2	Do. and Ell	Do.	22	67	12×5½	255	6×4	174	2	1,800	24	13,000	Fur.	F.	
					Do. No. 3	Do. 4′ do. and Splint.	Do.	17	94	13×5½	246	6×4	174	2	1,000	24	11,000	Fur.	F.	
McFarlane, T. A.	Easter Glentore	New Monkland	Do.	John Campbell	No. 1	Steam Coal	Long wall	5	28	6×5½ / 10×5½	210	—	—	—	—	—	—	—	—	
					No. 2	Do.	Do.	7	54	6×5½	210	4½×5½	210	1	150	21½	6,000	Fur.	N.F.	
					No. 3	Do.	Do.	3	7	8×5½	87	4×5½	87	—	110	12	6,600	S. jet	N.F.	
McCallum, John A.	Raebog	Do.	Do.	Alex. Ferguson	No. 1	Drumgray	Do.	10	40	12×5	108	12×5	150	1	950	12	8,000	Fur.	N.F.	
					No. 2	Do. and Kiltongue.	Do.	4	20	6×5	60	4½×5	60	1	100	20	7,000	Fur.	N.F.	
McNaughton, Jas., Son, and Co.	Netherjohnstone	Dalzell	Lanark	James Wyper	Garibaldi	Ell	Stoop and room	8	30	13×5½	336	4½×5½	396	1	800	36	11,250	Fur.	F.	
McNaughton, D., & Co.	Broomhill	Dalserf	Lanark	John McGee	No. 2	Virtuewell	Long wall	3	13	—	84	—	84	—	266	16	1,200	Fur.	N.F.	
Merry & Cunninghame (Limited).	Craigneuk	Cam'nethan	Do.	Alex. McD. Thomson.	Wellington	Main Coal	Stoop and room	11	55	8×5½	388	5×5½	388	—	650	30	5,200	Fur.	F.	
						Splint	Do.			—	—	—	—	—	900	30	4,300	—	F.	
Do.	Sunnyside	Dalzell	Do.	Do.	No. 4	Do.	Do.	13	120	12½×5½	318	9×5½	354	1	1,915	—	22,500	Fur.	F.	
					No. 6	Do. and Main	Do.	8	50	12½×5½	246	6×4	246	—	1,056	—	4,000	Fur.	F.	
Do.	North Motherwell	Hamilton	Do.	Alex. Ross	No. 1	Ell	Do.	17	93	14×6	360	5×6	268	1	3,651	30	16,200	Fur.	F.	
					No. 2	Splint	Do.	6	144	13×6	468	5×6	492	2	2,580	31	17,400	Fur.	F.	
Do.	Carnbroe	Bothwell	Do.	W. M. Frazer	No. 8	Main and Pyotshaw	Do.	9	60	12×5½	630	6×5½	570	—	600	20	6,000	Fur.	F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Merry & Cunninghame (Limited).	Woodhall	Bothwell	Lanark	W. M. Frazer	No. 1 (Mine)	Ell	Stoop and room	–	–	—	—	4×4	24	–	—	—	—	—	—	Abandoned.
					Crow	Drumgray	Long wall	–	–	16×5½	870	16×5½	870	–	—	—	—	—	—	
					Garden	Do.	Do.	–	–	7×5	660	4×5	660	–	—	—	—	—	—	
Do.	Haughhead	Hamilton	Do.	David Anderson	No. 1	Ell, 4′ 10″, Main, 4′ 8″, Pyotshaw, and Splint, 5′ 6″.	Stoop and room	12	87	11×6	582	6×4½	582	1	3,400	27½	8,300	Fur.	F.	
					No. 2		Do.	5	48	11×6	438	6×4½	438	1	560	27½	12,500	Fur.	F.	
Do.	Auchenraith	Do.	Do.	Mich. Ross	Nos. 1 and 2	Ell, 5′ 6″	Do.	22	45	23×7	720	6½×7	738	1	990	40	25,000	Fur.	F.	
Merryton Coal Co.	Merryton	Do.	Do.	David Seggie	No. 1	Splint, 4′ 6″	Do.	33	—	14×6	600	4×6	420	1	2,300	50	17,300	Fur.	F.	
					No. 2	Ell, 5′	Do.	—	200	12×6	420	4½×6	600	2	3,800	55	13,000	Fur.	F.	
						Main, 4′ 4″	Do.	—	—	—	500	—	600	–	2,080	54	8,000	Fur.	F.	
Milton Coal Co.	Milton	Ballingray	Fife	Thos. Muir	No. 1 Kirkland	Parrot	Long wall	6	24	10×4½	72	5×4	48	1	250	9	3,800	Fur.	N.F.	
					No. 3 Mine	Capledrae Parrot	Do.	4	11	8×5	132	5×4	36	–	200	16	1,500	Fur.	N.F.	
Monkland Iron & Coal Co. (Limited).	Armadale	Bathgate	Linlithgow	Robt. Martin	No. 2	Main Coal	Do.	5	21	9×5	231	5×5	209	–	680	20	2,200	Fur.	N.F.	Ironstone also worked.
					No. 14	Do.	Do.	2	15	9×5	231	5×5	208	–	1,680	14	1,820	Fur.	N.F.	
					No. 15	Do.	Do.	5	10	7½×5	196	5×5	229	–	530	14	1,540	Fur.	N.F.	
Do.	Chapelhall	New Monkland	Lanark	James Muir	No. 3	Do.	Do.	4	13	7×5	360	5×5	372	–	200	16	10,000	Fur.	F.	
					No. 4	Lower Drumgray	Do.	5	27	9×5½	780	5×5½	792	–	900	18	13,000	Fur.	F.	
					No. 5	Do. do. 2′ 10″	Do.	6	64	12×5	660	4×5	678	–	1,200	18	14,000	Fur.	F.	
						Upper do. 2′ 8″	Do.													
					No. 8	Lower Drumgray	Do.	6	48	7½×5½	228	5×5½	240	1	50	25	18,000	Fur.	F.	
Do.	Tannochside	Bothwell	Do.	C. Jamieson	No. 1	Splint and Gas	Stoop and room	18	117	21×5½	702	15×5½	702	2	4,100	20	14,000	Fur.	F.	
					No. 2	Main and Pyotshaw	Long wall	11	96	21×5½	702	15×5½	702	1	4,100	20	8,000	Fur.	F.	
Do.	Cleland	Do.	Do.	Thos. Campbell	No. 18	Ell, 5′ 6″, and Main	Stoop and room	6	13	10×5	57	4×6	42	–	700	27½	—	Nat.	F.	
					No. 19	Main	Do.	4	20	10×5	132	12×5	72	–	780	27½	8,176	Fur.	F.	
Do.	Thankerton	Bothwell	Lanark	Robt. Young	No. 1	Pyotshaw	Long wall	3	20	12×5	136	5×4	78	1	2,480	14	5,200	Fur.	F.	
					No. 2	Main	Stoop and room	2	6	7×5	274	5×4½	274	–	2,818	18	4,500	Fur.	F.	
					No. 3	Do.	Do.	3	33	7×5	66	5×4½	78	1	1,315	15	4,350	Fur.	F.	
					No. 4	Virtuewell	Long wall	5	48	5×4½	312	6½×5	327	1	1,475	13	7,360	Fur.	F.	
					No. 5	Do.	Do.	5	35	5×4½	189	5×5	199	–	1,750	12½	3,900	Fur.	F.	
Do.	Bankend	Lesmahagow	Do.	Jno. Adam	Nos. 5 and 10	9 feet, Coal	Do.	—	—	12×5	132	12×5	96	–	350	12	545	Nat.	N.F.	
Do.	Spindleside	Shotts	Do.	Robt. Condie	No. 1	Virtuewell	Do.	7	21	12×5	240	15×5	180	–	480	25	9,300	Fur.	N.F.	
					No. 2	Do.	Do.	8	45	12×5	240	15×5	180	–	480	25	—	—	N.F.	
Morningside Coal Co.	Allanton	Cam'nethan	Do.	James Morton	Mine No. 1	Splint	Stoop and room	2	10	Mine	300	—	—	–	400	24	1,000	Nat.	N.F.	
					No. 1	Kiltongue	Long wall	5	20	8½×5½	190	5×5½	190	1	400	20	4,000	Nat.	N.F.	Sinkin
					No. 2			4	12	8×5	270	5×5	270	–	—	—	—	—	—	
Mossend Iron Co.	Orbiston	Bothwell	Do.	Jas. Munro	No. 1	Pyotshaw, 3′ 6″	Do.	10	93	12½×6	810	13½×6	810	2	2,200	25	12,000	Fur.	F.	Fur. in Ell Coal for both Pits.
						Main, 3′ 8″, Splint, 5′ 4″	Stoop and room													
							Do.													
					No. 2	Ell, 6′ 6″	Do.	8	67	12½×6	660	13½×6	660	1	2,400	36	8,500	Fur.	F.	
Do.	Hattonrig	Do.	Do.	Do.	No. 3	Splint, 3′ 8″	Do.	11	119	15½×6	810	8½×5½	810	1	1,600	20	10,000	Fur.	F.	Fur. in Ell Coal No. 4 for both Pits.
					No. 4	Pyotshaw, 3′ 8″, Main, 3′ 8″.	Long wall	8	79	15½×6	726	8½×5½	726	1	1,160	20	8,000	Fur.	F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Millar, William	Fairybank	New Monkland	Lanark	Wm. Millar	No. 1	Lower Drumgray	Long wall	7	37	6×4½	42	6×4	42	–	600	12	2,400	Fur.	N.F.	
Millen, Wyper, & Co.	North Linrig	Shotts	Do.	Jno. Wyper	No. 1	Upper Drumgray	Do.	3	18	7×4½	75	7½×4½	75	–	200	28	1,500	Nat.	N.F.	
					No. 2	Main		4	16	6×5½	66	4½×5½	66	–	160	50	2,500	S. jet.	N.F.	
McDonald, D.	Redhouse	Bathgate	Linlithgow					—	—	—	—	—	—	–	—	—	—	—	—	Stopped.
Millar and Rodger	Swinhill	Dalserf	Lanark	Matthew Walker	No. 1	Virtuewell	Long wall	2	7	10×4½	69	5×5½	78	–	540	20	5,000	Nat.	N.F.	
					No. 2	Kiltongue	Do.	3	18	7½×5½	246	5×5½	276	1	460	20	6,800	Nat.	N.F.	Abandoned Feb. 1875.
					No. 2	Under Drumgray	Do.	3	9	7½×5½	306	5×5½	336	1	430	22	10,500	Fur.	N.F.	
					No. 3	Virtuewell, 2′ 4″	Stoop and room	2	21	7½×5½	84	5×5½	98	1	570	22	10,000	Fur.	N.F.	
					No. 3	Kiltongue	Long wall	3	36	7½×5½	240	5×5½	276	1	425	20	14,000	Nat.	N.F.	
					No. 2.	Upper Drumgray	Do.	3	15	7½×5½	281	5×5½	321	1	60	22	9,000	Fur.	N.F.	
Napier, Jas.	Riggend	New Monkland	Do.	James Young	No. 2	Drumgray	Do.	6	20	6×5½	156	5×5½	156	–	200	25	—	—	—	
Nasmyth, Alex.	Dundonald	Auchterderran	Fife	A. Nasmyth, jun.	No. 2 or West	Glass Coal	Do.	3	28	9×5½	330	12	270	–	1,600	16	3,140	Fur.	N.F.	Fur. on surface at No. 1 Pit.
					No. 3 or Engine	Lochgelly Splint	Do.	15	36	14×6	360	12	270	–	1,150	16	3,940	Fur.	N.F.	
Nimmo, Jas., & Co.	Longrigg	Slamannan	Stirling	Wm. Roy	No. 1	Splint, 22′	Do.	7	85	7½×5	148	4½×5	148	1	400	12	5,750	Fur.	N.F.	
					No. 2	Do.	Do.	6	20	7½×5	168	4½×5	168	1	300	12	4,500	Fur.	N.F.	
Do.	Lochend	Do.	Do.	Do.	No. 1	Do.	Do.	4	12	7½×5	258	4½×5	258	–	—	—	—	—	N.F.	Just sunk.
					No. 2	Do.	Do.	5	20	7½×5	240	4½×5	240	–	140	13	3,500	Fur.	—	
					No. 3	Ladygrange	Do.	3	15	7½×5½	96	6½×5½	96	–	100	11	4,500	Fur.	N.F.	
Do.	Longriggend	Do.	Do.	R. Wilson	No. 1	Splint	Do.	5	70	7½×6	222	6×5½	211	1	180	12	11,500	Fur.	N.F.	
					No. 2	Virtuewell	Do.	—	—	7×5½	51	6×5½	51	1	260	22½	12,000	Steam	N.F.	
					No. 3	Splint	Do.	3	28	7×5	80	5×5	80	–	120	15	6,730	Steam	N.F.	
Do.	Kippbyre	New Monkland	Lanark	George Anderson	No. 3	Virtuewell	Do.	5	43	12×5	102	5×5	102	–	240	16	4,800	Fur.	F.	
					No. 5	Kiltongue	Do.	3	21	4½×5	180	—	—	–	140	16	8,000	Fur.	F.	Thrashbush pit is the upcast for No. 5.
					No. 7 Mine	Kiltongue	Do.	3	20	—	—	5×4	156	–	200	12	6,000	Nat.	F.	
Nimmo, John, and Son.	Limerigg Lochside	Slamannan	Stirling	Geo. M. Anderson	No. 3	Johnston Coal	Do.	7	37	7	60	4½	60	–	935	15½	4,970	Fur.	N.F.	
					No. 3	Lady Grange	Do.	8	36	5	105	4½	105	–	633	12½	3,300	Fur.	N.F.	
					No. 4	Do.	Do.	1	4	5	240	6	45	–	375	15	1,530	Fur.	N.F.	
Do.	Drumriggend	Do.	Do.	Do.	Nos. 1 and 2	Splint	Do.	10	32	8×5½	78	7×5½	108	–	422	15	4,376	Nat.	N.F.	
						Coxrod	Do.	2	20	—	153	—	198	–	320	16	5,320	Nat.	N.F.	
Nimmo and McKillop.	Muiravonside		Do.	Jas. Maxwell	No. 1	Splint	Do.	3	16	7½×5½	156	5½×5	156	–	200	15	6,500	Fur.	N.F.	Sinking.
					No. 2	Do.	Do.	2	7	—	168	—	168	–	—	—	—	—	—	
					No. 3	Do.	Do.	3	24	8×5½	108	5½+5	108	–	120	20	4,750	—	—	
Do.	Lochouse	Slamannan	Do.	Jno. Murray	Lochouse	Do.	Do.	4	35	5×5	147	5×5	147	1	600	20	5,750	Fur.	N.F.	
					Drumclair	Coxrod	Do.	3	16	7½×5	225	5×5	225	1	200	10	4,450	Fur.	N.F.	
Nitshill and Lesmahagow Coal Co.	Auchinheath, Southfield, and Fence.	Lesmahagow	Lanark	J. Lancaster	Auchinheath	Lesmahagow Cannel.	Do.	15	68	11×4½	300	10×4½	236	1	2,200	20	4,500	Fur.	N.F.	
					Braidholm	Do.	Do.	22	80	20×6½	684	12½×6½	300	1	1,700	20	4,000	Fur.	N.F.	Furnace on surface.
					Southfield	Do.	Do.	87	200	16½×5½	708	7½×5½	510	4	3,800	24	21,100	Steam	F.	
					Dross Coal	Dross	Do.	1	6	4×4	48	4×2	68	–	200	12	600	Fur.	N.F.	Boiler chimney.
					Fence No. 1			—	—	—	—	—	—	–	—	—	—	—	—	Sinking.
					Do. No. 2			—	—	—	—	—	—	–	—	—	—	—	—	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated. Parish.	Where situated. County.	Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed. Above Ground.	No. of Persons employed. Below Ground.	Size and Depth of Downcast and Upcast Shafts. Downcast. Size in Feet.	Downcast. Depth in Feet.	Upcast. Size in Feet.	Upcast. Depth in Feet.	Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
Omoa and Cleland Iron and Coal Co. (Limited).	Cleland	Shotts	Lanark	Alex. Blyth	No. 1 No. 40	Ell Do.	Stoop and room Do.	4 3	30 17	5½×5½ 4½×7½	Mine 210	5×5 4½×4½	72 210	1 –	854 1,010	20 22	4,600 5,400	Fur. Fur.	N.F. N.F.	
Do.	Wyndedge	Do.	Do.	Do.	No. 4 No. 5	Virtuewell Do.	Long wall Do.	3 4	15 35	9×5½ 4½×5½	211 147	4½×5½ 4½×5½	117 147	2 –	562 680	16 16	3,500 3,000	Fur. Fur.	N.F. N.F.	
Do.	Langbyres	Do.	Do.	Do.	No. 1	Do.	Do.	5	17	4½×5	102	4½×5	102	–	581	16	2,085	Fur.	N.F.	
Pirnie Coal Co.	Pirnie	Wemyss	Fife	J. W. Kirkby	No. 2	Parrot Wood Coal	Do.	19	69	15×5	360	15×5	162	–	1,310	23	20,000	Fur.	N.F.	
Ponfeigh Coal Co.	Ponfeigh	Douglas	Lanark	Harrison	No. 1 Nos. 1 and 2 Nos. 3 and 4 No. 5	Rob, 5′ 2″ Do. Back, 4′ 6″ Collypath, 3′ 9″ –	Stoop and room Do. Do. –	10 — — —	18 — — 6	7×5 — — —	141 — — —	5×5 4×4 — 4×4	141 12 — 20	– – – –	600 510 — 200	21 36 — 16	2,800 — — 1,700	Fur. — — —	N.F. — — —	Stopped temporarily.
Provanhall Coal Co.	Bredisholm	Bothwell	Do.	John Reid	No. 2 No. 2 No. 4	Pyotshaw, Main Splint Do.	Long wall Do. Do.	— 19 4	— 150 26	— 20×5½ 14×5½	— 864 600	— 18×5½ 18×5½	— 744 744	– – –	1,914 1,932 1,256	16 16 13	15,000 10,000 8,000	Fan. Fan. Fan.	F. F. F.	"Waddle" fan, 15′ dia. at No. 3. Sinking deeper.
Prestongrange Iron and Coal Co. (Limited).	Prestongrange	Prestonpans	Haddington	A. H. Nasmyth	No. 1, Dolphingston. No. 2 Birslie Morrisons Haven.	No. 1, Jewel Diamond Splint Splint 3 feet Beggar – –	Long wall Do. Do. Do. Do. Do. – –	7 8 7 3 — 5 — —	34 19 11 21 19 31 — —	— — — 10 10 10 — —	— — — 432 432 432 — —	— — — 7½×6½ 7½×6½ 7½×6½ — —	— — — 360 360 360 — —	– – – – – – – –	600 800 600 510 200 800 — —	20 20 20 20 20 20 — —	5,600 — 4,000 4,600 4,000 4,700 — —	— — Fur. Fur. Fur. Fur. — —	— — N.F. N.F. N.F. N.F. — —	Re-opening. Sinking.
Rawyards Coal Co. (Limited).	Rawyards	New Monkland	Lanark	Walter Stirling	No. 1 No. 2 No. 4 No. 5 No. 6 No. 7	Wandering Coal – Kiltongue Splint Coal Do. Kiltongue	Do. – Do. Do. Do. Do.	4 6 6 4 — 7	20 4 30 25 — 30	5 7×5 6½×5 14×5 — 6×5	150 540 350 102 180 342	7 7½×5 5×5 14×5 — 6×5	162 540 360 118 186 342	– – – – – –	50 — 288 440 43 288	20 — 20 22 32 20	3,000 — 3,000 5,000 4,000 4,500	Fur. — Fur. Fur. Fur. Fur.	F. — F. F. F. F.	Sinking.
Rankine, Patrick	Darngavil and Greyrigg	Do.	Do.	Peter Brown	No. 10, Darngavil. Do. No. 1, Greyrigg No. 2, do.	Virtuewell, 2′ 7″ Do. Do.	Do. Do. Do.	5 5 3	43 70 23	13×5 13½×5 8½×5	139 96 96	6×5 6×5 5×5	126 120 96	– 1 –	968 550 260	20 20 20	7,500 8,050 4,000	Fur. Fur. Fur.	F. F. F.	
Redding Colliery Co.	Redding	Polmont	Stirling	Arch. Campbell	No. 4, Gardrum No. 4 No. 13 Ellrig No. 13 No. 15 No. 16 No. 16 No. 16 No. 17 No. 17 No. 18	Hard Coal Soft Hard Soft Do. Hard Soft Hard Soft Do.	Do. Do. Do. Do. Do. Do. Do. Do. Do. Do.	7 — 12 — 9 5 — 11 — 5	52 9 39 80 53 13 11 32 54 73	13×5½ 13×5½ 7×5½ 7×5½ 7×5 14×5½ 14×5½ 7×5½ — 13×5½	87 164 90 168 168 240 300 105 183 102	10×5½ 10×5½ 10×5½ 10×5½ 10×5½ 14×5½ 14×5½ 10×5½ 10×5½ 11×5½	84 168 84 168 168 240 240 105 183 150	– – 1 1 1 – – – 1 1	— 600 1,000 880 1,100 800 600 640 800 1,200	— 8 10 8 9 8 8 9 8 10	— 1,800 1,700 4,800 1,800 500 500 1,700 3,000 2,120	— Fur. Fur. Fur. Fur. Fur. Fur. Fur. Fur. Fur.	— N.F. N.F. N.F. N.F. N.F. N.F. N.F. N.F. N.F.	Fur. at No. 13. Fur. at No. 2. Fur. at No. 2.

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Robinson, J. & E.	Glentore (Wester).	New Monkland	Lanark	—	No. 1	Kiltongue	Long wall	8	50	7×5	120	5½×5	127	–	550	20	—	Fur.	N.F.	
Robertson, John, & Son.	Ballochnie	New Monkland	Do.	Jno. Benson	No. 2	Main Coal, 3′ Pyotshaw	Stoop and room Do.	6 —	52 —	12×5 —	54 —	12×5 —	70 —	1 –	1,080 —	24 —	3,600 —	Fur. —	N.F. —	
Rosslyn, Earl of	Dysart	Dysart	Fife	Jas. McLay	Lady Blanche Randolph Francis	Main Do. —	Do. Do. Do.	18 15 4	90 104 7	6×6 16×6 9×8	120 456 342	9×6 15×5½ 9×6	198 396 342	– 1 –	2,700 1,800 —	36 90 —	9,000 11,000 —	Fur. Fur. —	N.F. N.F. —	Sinking.
Russell, Archd.	Brownlee	Carluke	Lanark	Archd. Kerr	No. 1 No. 2	Ell Do.	Do. Do.	18 7	54 8	15×6 13×6	420 396	— 4×6	— 396	– –	1,858 —	72 —	16,760 —	— —	— —	Daylight mines for upcast. Sinking.
Do.	Clydesdale	Cam'nethan	Do.	Do.	No. 1 No. 3 No. 4 No. 5 No. 5 No. 4	Main Splint Ell Splint Main Main	Do. Do. Do. Do. Do. Do.	10 12 15 13 1 31	29 56 63 151 5 141	14×5½ 12×5½ 12×5½ 7×5½ 7×5½ 12×5½	384 360 360 384 318 360	5×5½ 10×5½ 10×5½ 5×5½ 5×5½ 10×5½	384 240 240 354 318 240	– – – – – –	1,220 1,096 3,938 1,720 3,330 2,636	50 60 72 54 20 54	1,940 3,963 8,224 4,665 200 4,703	St. jet Fur. Fur. Fur. St. jet Fur.	F. F. F. F. F. F.	
Do.	Ferniegare	Hamilton	Do.	James Smart	No. 1 No. 2	Main, 3′ 6″ Ell, 5′ 6″	Do. Do.	22 18	105 65	15½×5 14×5	384 456	5×5 5×5	384 384	– 1	3,460 1,930	40 40	7,200 6,200	Fur. Fur.	F. F.	
Do.	Burnclaith	—	—	—	No. 1	—	—	—	—	—	—	—	—	–	—	—	—	—	—	Sinking.
Do.	Silverton Hill	—	—	—	No. 1	—	—	—	—	—	—	—	—	–	—	—	—	—	—	Sinking.
Russell, J. & J.	Greengairs	New Monkland	Lanark	Wm. Grant	No. 3	Virtuewell	Long wall	7	37	5½×5	204	4¾×5	204	–	1,720	18	5,300	Fur.	F.	
Russell, James, & Son.	Blackbraes	Muiravonside	Stirling	John Smellie	Drumbroider No. 3 No. 12 No. 13	Splint Soft Coal Splint Do.	Do. Do. Do. Do.	5 7 4 7	33 56 24 64	6×5 5×4½ 6×5 6×5	150 281 126 240	5×6 5×4½ 6×5 6×5	150 312 126 240	– 4 – 1	660 1,188 400 760	13 19 25 13	1,155 4,410 1,875 1,820	Nat. Fur. Fur. Fur.	N.F N.F. N.F. N.F.	
Do.	Boghead	Bathgate	Linlithgow	John Blyth	No. 6 No. 7 No. 10 No. 15 No. 7, Torbane Hill.	Parrot Ball Coal Do. Do. Main Coal	Do. Do. Do. Do. Do.	3 4 7 7 3	29 42 55 41 34	6×5 10×5 5×5 10×5 5×5	34 168 108 210 171	5×5 5×5 4½×4½ 5×5 5×5	96 168 108 78 171	– – 1 – –	1,000 300 2,720 1,640 2,046	16 20 25 20 30	3,588 5,000 4,600 6,000 1,440	Fur. Fur. Fur. Fur. Fur.	N.F. N.F. N.F. N.F. N.F.	
Ross, James	Roadside	New Monkland	Lanark	Ed. Gillespie	No. 2	Kiltongue	Do.	7	38	7×5	186	5×5	186	1	680	25	3,700	Fur.	N.F.	
Robertson, W., jun.	West Quarter	Falkirk	Stirling	—	—	—	—	—	—	—	—	—	—	–	—	—	—	—	—	tempo-
Scotland and Auld.	Clarkstone	Beath	Fife	A. Scotland	Nos. 1 and 2 mines.	Splint, 5 feet	Long wall	9	21	4×4	—	16×5	480	–	1,760	16	1,030	Fur.	N.F.	
Shotts Iron Co.	Shotts	Shotts	Lanark	Jas. Ormiston	Baton Baton Mine Hartwoodhill Springbank Calderhead Hall Water Engine	Shotts Furnace Virtuewell Shotts Furnace Do. Do. Do. Fire-clay	Do. Do. Do. Do. Do. Do. Do.	10 1 10 6 12 13 3	68 8 56 44 105 66 4	9×5 6×6 9×5½ 9½×5½ 9×5½ 13×5½ 9×4½	90 Mine 78 105 180 198 72	10×5½ 4×4 18×6 10×5½ 5×5½ 4½×4 7×4½	171 66 330 171 180 112 72	1 1 1 1 1 1 –	4,000 980 1,200 1,600 2,300 3,500 250	24 34 26 24½ 27½ 23 30	14,600 1,950 9,320 7,424 11,600 6,200 2,800	Fur. Fur. Fur. Fur. Fur. Fur. Fur.	F. F. F. F. F. F. N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
															yards.	feet.				
Shotts Iron Co.	Loanhead	Lasswade	Edinburgh	Jas. Prentice	Ramsay Burghlee	Great South and North Great and Parrot	Stoop and room Do. Do.	41	32 34 80	14×5 — 15×5½	600 — 650	7 5×6	360 615	1 — —	1,990 — 2,000	30 — 30	2,562 — 8,950	Fur. — Steam	N.F. — N.F.	
Do.	Arden	New Monkland	Lanark	Jas. Morton	Arden Mine	Virtuewell	Long wall	2	13	6×4	—	8×5	66	—	400	24	3,250	St. jet	N.F.	
Do.	Brownieside	Do.	Do.	Do.	Brownieside	Drumgray	Do.	2	9	15×6½	468	3×6½	498	—	616	19	5,200	Fur.	F.	
Do.	Castlehill	Carluke	Do.	Do.	No. 4 No. 8	Main Coal Do.	Stoop and room — — —	6 3	44 21	14×5½ 10×5½	183 171	12×5 5×5	170 102	— 1	1,060 800	49 40	6,088 2,680	Fur. Fur.	N.F. N.F.	
Do.	Morningside	Cam'nethan	Do.	Do.	No. 1 No. 5 No. 7 No. 9 No. 10	Main & Pyotshaw Ell, Pyotshaw, and Main. Virtuewell Main and Splint — — —	Stoop and room Do. Long wall Stoop and Room — — —	5 7 7 8 7	21 35 32 27 12	13×5 15¾×6½ 13×5½ 15¾×6½ 12½×5½	108 252 252 336 —	4×5 4¼×5 3¾×5½ 4½×6½ 3½×5½	138 277 278 366 —	1 — — — —	640 926 750 580 —	36 38 30 50 —	4,000 10,710 1,689 6,830 —	Fur. Fur. Fur. Fur. —	F. F. F. F. —	Sinking.
Do.	Polkemmet	Whitburn	Linlithgow	Robt. Jamieson	No. 4 No. 5	Rough and Ball Ball	Long wall Do.	— —	— —	9×5½ 9×5½	228 78	6×5½ 6×5½	228 86	— —	960 792	22 16	4,248 2,004	Nat. Fur.	N.F. N.F.	
Do.	Harthill	Do.	Do.	Do.	No. 1	Do.	Do.	8	6	7×5	171	5×5	200	—	240	25	2,400	Fur.	N.F.	
Simpson, A. G.	Carfin	Bothwell	Lanark	J. F. Langlands	No. 1 No. 2 No. 3	Main Coal Virtuewell Do. Ell Coal Pyotshaw	Do. Do. Do. Stoop and room Do.	4 4 6 5 5	20 15 74 40 30	15×6 15×6 15×6 11×5 11×5	120 420 420 174 360	12×6 12×6 12×6 16×5 16×5	96 420 420 190 340	1 2 2 1 2	1,000 1,200 600 666 732	20 16 16 22 14	2,000 10,000 5,000 4,000 —	Fur. Fur. Fur. Fur. Fur.	F. F. F. F. F.	
Simpson, James	Springwells	New Monkland	Lanark	James Simpson	No. 1 No. 2 No. 3	Kiltongue Do. Do.	Long wall Do. Do.	8 9 4	40 40 15	12×5 6×5 8×5	360 360 360	— 6×5 6×5	— 360 360	— — —	260 200 —	12 12 —	5,000 — —	Fur. — —	F. — F.	Newly sunk.
Simpson, Wilson, & Co.	Legbrannock	Bothwell	Do.	John Wilson	No. 1	Virtuewell	Long wall	4	25	12×5	183	4½×5	66	—	600	24	8,000	Fur.	F.	
Smith, Alexander	Skellyton	Dalserf	Do.	Alex. Smith	Skellyton	Splint	Stoop and room	10	45	13×5½	114	14×5½	108	—	1,300	25	4,100	Fur.	N.F.	
Smith and Gray	Netherburn	Do.	Do.	Do.	Netherburn	Do.	Do.	4	17	5½×5½	66	8×5½	66	—	460	22	4,900	St. jet.	N.F.	
Smith, James, and Son.	Hill	Do.	Do.	James Boyd	No. 1, Hill No. 2, Do.	Main Do.	Do. Do.	6 9	32 65	11×5½ 11×5½	175 175	15×6 15×6	156 156	— —	1,200 1,200	48 48	3,500 3,500	Fur. Fur.	F. F.	
Sneddon, J. D. & J.	Cam'nethan	Cambusnethan	Do.	Thos. Loudon	No. 1 No. 4 No. 9	Main, 4′, Splint, 4′ Ell Main Splint	Do. Do. Do.	10 — 12	81 — 65	8×6 — 6×5½	480 — 132	6×6 — 6×5½	480 — 132	1 — 1	1,200 — 2,000	32 — 28	13,000 — 11,000	Fan — Fan	F. — F.	Fan 14½ ft. dia. Stopped. Fan 15 ft. dia.
Sneddon, Jno., and Co.	Allanshaw	Hamilton	Do.	— — —	No. 1 No. 2	— — —<	— — —	—	—	—	—	—	—	—	—	—	—	—	—	Sinking.
Spencer, Andrew	Auldton	Dalserf	Do.	Alex. Cunninghame.	No. 1 No. 1 No. 2	Splint Main Ell, 5′ 6″	Stoop and room Do. Do.	4 4 4	26 20 60	21×6 21×6 21×6	552 438 360	16×6 16×6 16×6	438 438 330	— — —	1,100 1,630 1,760	55 40 60	— 7,000 8,000	Fan — —	F. F. F.	Fan 14′6″ dia. × 6 ft. 70 rev. per min.
Do.	Ashgill	Do.	Do.	Do.	No. 3	Splint Main	Do. Do.	9	83	21×6	552	16×6	438	—	2,930	40	14,000	Fan	F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c. during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Scott and Livingstone.	Huttonhill	Bothwell	Lanark	Duncan Livingstone.	No. 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Spowart, Thos., & Co.	Elgin & Wellwood	Dunfermline	Fife	Robert Muir	Wellwood	8 feet	Long wall	6	52	10×5	90	—	—	—	1,760	14	4,500	Fur.	N.F.	Fur. at Balmule.
					Balmule	Part of 8 feet 3′ 1″	Do.	6	50	—	—	10×5	180	—	—	—	—	—	—	
					Union	5 feet and Splint	Do.	14	39	10×5	300	9×4½	142	1	1,760	16	5,516	Fur.	N.F.	Fur. at Hunter.
					Victoria	8 feet, Swallow drum	Do.	7	33	8×4	114	10×4½	196	1	1,037	13	3,481	Fur.	N.F.	
					Prince of Wales	Splint	Do.	21	58	12×5	405	10×4½	252	1	1,180	16	8,700	Fan	N.F.	Fan 16′×5′. From
					Colton	Do.	Do.	12	36	10×5	300	—	—	—	2,156	16	5,760	Fan	N.F.	40 to 60 rev. per
					Do.	Do., 5 feet	Do.		51	—	—	—	—	—	2,200	16	8,975	Fan	N.F.	minute, at
					Elgin	3 feet	Do.		12	12×6	120	—	—	—	800	12	1,210	Fur.	N.F.	Albert Pit.
					Do.	Swallow drum	Do.	15	20	—	—	10×5	96	—	1,360	20	1,200	Fur.	N.F.	
					Do.	8 feet	Do.		30	—	—	—	—	—	1,210	15	3,410	Fur.	N.F.	
					Wallsend	5 feet	Do.	19	50	12×5	378	5×3	378	—	911	18	2,300	Fur.	N.F.	
					Do.	Splint	Do.		28	—	—	—	—	—	1,118	14	2,530	Fur.	N.F.	
Do.	Do.	Do.	Do.	Do.	Drumtuthill	—	—	8	12	14×6	372	6×4	372	—	—	—	—	—	—	Sinking.
					Lochend	Splint	Do.	4	19	10×5	300	5×3	300	1	100	20	2,000	Steam jet.	N.F.	Newly sunk.
Springbank Coal Co.	Springbank	Shotts	Lanark	James Hart	No. 2	Lower Drumgray	Do.	7	39	10½×4½	90	10½×5½	155	1	1,200	12	4,500	Nat.	N.F.	
					No. 3	Do.	Do.	18	60	14×5½	300	8×5	240	1	700	36	4,100	Fur.	F.	
Stevenston Iron and Coal Co.	Stevenston	Bothwell	Lanark	Wm. Aitken	No. 5	Pyotshaw, 4′	Long wall	9	95	14×5	346	13×4½	270	—	1,540	32	13,000	Fur.	F.	
					No. 7	Virtuewell	Do.	6	40	12×5	432	13×5	336	1	1,876	26	11,000	Fur.	F.	Fur. on surface.
					No. 8	Main	Stoop and room	5	60	14×5	346	13×4½	270	—	1,670	35	11,500	Fur.	F.	No. 5 is upcast.
Summerlee Iron Co.	Dykehead	Hamilton	Do.	William Wilson	No. 1	Ell, Main, and Splint.	Do.	29	163	15×5	105	22×5½	231	2	4,923	60	38,125	Fan	F.	"Guibal" fan, 16½ ft. diar.
Do.	Shieldmuir	Dalzell	Do.	Do.	No. 2	Ell, Main	Do.	11	44	8×5½	300	7×5	288	—	548	36	16,200	Fur.	F.	
Do.	Stepends	Shotts	Do.	S. Macdonald	No. 5	Drumgray	Long wall	7	25	8½×5	186	4½×5	186	1	440	32	3,300	Fur.	F.	
Sutherland, Duke of.	Brora	Clyne	Sutherland	James Edwards	Faskally	Brora	Do.	10	22	8	270	8	196	2	400	16	2,500	Fur.	N.F.	
Swann, James	Rigside and Glespin.	Douglas	Lanark	Wm. Walker	Ellanora	Dross Coal	Stoop and room	4	13	12×5½	156	5×4	76	1	1,110	24	2,280	Fur.	N.F.	
					Gas	Gas, 22″	Long wall	17	44	13×5½	195	5½×5	195	1	2,800	40	12,025	Steam	N.F.	
					Glespin	Glespin	Do.	3	16	12×5	186	5×4	120	1	800	30	2,880	Fur.	N.F.	
Steel, James	Femington	Cam'nethan	Do.	Francis Danks	—	Main	Stoop and room	4	8	—	—	—	—	—	—	—	—	—	—	Stopped.
Sym, James	Marlage	Dalserf	Do.	Wm. Sym	Marlage	Do.	Do.	6	18	12×5	129	9×5½	125	—	1,200	32	6,500	Fur.	N.F.	
Snowdowne & Co.	Tranent	Tranent	Haddington	Jas. Snowdowne	Ormiston Road	Do., 4′ 4″	Do.	12	38	9×5	78	9×5	105	—	1,300	28	4,830	Fur.	N.F.	Downcast.
					Carlaverock	Do., 4′ 4″	Do.	12	40	9×5	78	9×5	105	—	1,300	28	4,830	Fur.	N.F.	Upcast.
Snowdowne, Jas.	Middleton	Muckhart	Perth	Do.	—	Cherry	Long wall	3	10	6×5	Mine	8×5	60	—	500	20	5,000	Nat.	N.F.	
Struthers, James, & Co.	Rochsoles and Dykehead.	New Monkland	—	Robt. McAllister	No. 4	Virtuewell	Do.	4	16	5×5	54	5×5	66	—	200	20	1,600	Fur.	F.	
					No. 6	Musselband (Ironstone).	Do.	6	46	5×4½	96	5×3½	121	—	160	20	1,950	—	—	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Seafield Patent Fuel Co.	Seafield	Bathgate	Linlithgow	Thos. Gardiner	No. 1 Mine	Houston	Long wall	—	—	7×6	484	6×4	30	–	—	—	—	—	—	Dip drift from surface. Stopped.
Steelend Coal Co.	Steelend	Saline	Fife	Robt. Crombie	Steelend	Smithy	Do.	3	20	11×4½	102	7×4½	24	1	500	15	12,000	Fur.	N.F.	
Stane Coal Co.	Stane	Cambusnethan	Lanark	—	No. 1	Shotts, Gas	Do.	3	8	6×5	69	5½×5	69	–	160	30	2,050	Fur.	N.F.	
Snowdowne, R.	Dollar	Dollar	Clackmannan	Robt. Snowdowne.	—	—	—	—	—	—	—	—	—	–	—	—	—	—	—	
Thomson, Chas.	Blackhill	Shotts	Lanark	—	No. 1 Mine	Main	Stoop and room	4	9	7×5	Mine	7×5	Mine	–	50	42	17,000	Nat.	N.F.	
Thornton, Jas.	Stravenhouse	Carluke	Do.	Robt. Barbour	No. 1	Ell Coal, 6′	Do.	9	80	18×6	404	5×6	383	–	1,660	30	12,000	Fan	F.	Fan 15′ dia.
					No. 2	Do., 6′	Do.	5	24	11×6	393	5×6	393	1	660	30	7,000	—	F.	
					No. 2	Main	Do.		11	—	403	—	—	–	—	—	—	—	—	
Thornton, Thos.	Fauldhouse	Whitburn	Linlithgow	Thos Thornton	No. 1	Shotts Furnace	Long wall	5	40	7×5	138	5×5	138	1	3,000	16	5,100	Fur.	N.F.	
					No. 2	Do.	Do.	5	30	4×6	26	10×6	66	–	1,300	16	3,000	Fur.	N.F.	
					Stonehead	Mill Coal	Do.	3	20	9½×5	198	3½×5	223	1	600	25	5,000	Fur.	N.F.	
Thomas, J.	Rameldrie	—	—	—	—	—	—	—	—	—	—	—	—	–	—	—	—	—	—	
Thrashbush Coal Co.	Thrashbush	New Monkland	Lanark	T. P. Martin	No. 3	Kiltongue	Do.	17	98	12×4	180	12×5	132	1	800	20	9,000	Steam	F.	
					No. 4	Virtuewell	Do.	2	11	6×5	48	7½×6	Mine	–	100	16	1,500	Fur.	F.	
Townhill Coal Co.	Townhill	Dunfermline	Fife	W. Moody	No. 5	Eight feet	Long wall	11	134	9×4½	60	10×5	270	1	1,883	22	8,200	Fur.	N.F.	
					No. 6	Five feet	Do.	9	53	12×5	372	10×5	270	–	1,050	24	6,400	Fur.	N.F.	
					No. 6	Splint	Do.	8	33	12×5	372	10×5	270	–	1,200	24	4,300	Fur.	N.F.	
					Day Mine	Four feet	Do.	—	—	12×5	276	5×5	70	1	1,700	40	13,600	Fur.	N.F.	Furnace on surface at Day Mine. Mine 900 ft. long.
					No. 7	Eight feet	Do.	8	50	12×5	276	8×5	156	1	690	22	12,000	Fur.	N.F.	
					No. 8	Swallow drum	—	8	62	9×5	170	10×5	177	–	550	18	6,400	Fur.	N.F.	
Torrance, Wm.	Trees	Bathgate	Linlithgow	Wm. Torrance	No. 1	Main	Stoop and room	4	18	4½	180	4½	198	–	440	22½	4,700	Fur.	N.F.	
					No. 2	Ball	Long wall	5	16	7	252	5	267	–	346	16	4,100	Nat.	N.F.	
Uphall Mineral Oil Co. (Limited).	Wester Barbauchlaw.	Bathgate	Do.	Henry Terris	No. 9	Main Coal	Long wall	5	45	10×6	249	3×6	270	1	490	20	7,000	Fur.	N.F.	
Ure, Robt.	Dykehead	Hamilton	Lanark	—	No. 1	Do.	Stoop and room	3	14	—	66	—	78	1	—	—	5,000	Fur.	N.F.	
Vogrie Coal Co.	Vogrie	Temple	Edinburgh	Jno. Hislop	No. 1	Splint, 4′ 6″	Do.	4	30	5×5	360	5×5	370	–	200	45	5,000	Fur.	N.F.	
Waddell, Alex.	Drumbowie	New Monkland	Lanark	Alex. Waddell	No. 1	Upper Drumgray	Long wall	2	10	5×5	90	6×5	101	1	200	16	6,912	Fur.	N.F.	
Waddell, Jas.	Overtown Station	Cambusnethan	Do.	Wm. Robertson	No. 1	Ell Coal, 9′	Stoop and room	12	69	10×5	282	3×5	312	–	1,000	12	6,171	Fur.	N.F.	
					No. 1	Main Coal, 5′ 8″	Do.			—	402	—	—	–	1,830	48	6,720	Fur.	F.	
					No. 2	Ell Coal, 9′	Do.	6	61	8×5	102	5×5	112	–	900	24	4,325	Fur.	F.	
					No. 2	Main Coal, 5′ 8	Do.			—	156	5×5	166	–	1,840	18	8,730	Fur.	F.	
Do. & Son	Mauldslie	Carluke	Do.	Jas. Lindsay	No. 1	Ell Coal	Do.	5	43	6×5½	900	5×5½	36	–	750	25	4,080	Fur.	N.F.	Downcast is a mine dipping 1 in 3.
					No. 2	Do., Main, 5′ 6″	Do.	13	119	12×5½	420	5½×5	360	3	450	60	24,354	Fur.	F.	
						Splint	Do.	—	—	—	—	—	—	–	—	—	—	—	—	
Walker, Henry, & Son.	Balbardie	Bathgate	Linlithgow	And. Wilson	No. 1	Balbardie, 4′ 1″	Long wall	10	41	12×5½	1,926	12×5	168	–	1,666	24	3,600	Fur.	N.F.	Downcast is a mine dipping 1 in 4.
					Mine	Do.	Do.	10	56	12×5½	1,926	12×5	168	–	2,366	24	4,200	Fur.	N.F.	

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Walker, Henry	Dykehead	New Monkland	Lanark	Neil Vernal	No. 4	Kiltongue	Long wall	6	45	12×5	228	6×5	228	2	300	20	14,500	Fur.	F.	
Watson, G. B.	Strathavon	Falkirk	Stirling	G. B. Watson	No. 1	Coxrod	Do.	5	32	6½×6	—	5×7	120	1	946	12½	9,570	Fur.	N.F.	
						Splint	Do.	—	—	6×6	42	5×7	42	—	660	20	4,680	Fur.	N.F.	
Watson, John	Balquhatstone	Slamannan	Do.	Thos. Thomson	No. 4	Coxrod and Splint	Do.	7	80	8×5	254	4×5	254	3	1,000	14	12,700	Fur & S. jet	N.F.	
					No. 5	Do., 2′ do.	Do.	7	70	7×5½	290	5×5½	290	1	1,000	24	6,704		N.F.	
					No. 7	Do. do.	Do.	8	87	8×5½	280	5×5½	280	1	1,090	14	5,110	Fur.	N.F.	Engine stalk is the ventilating power at these pits.
Do.	Lodge	Do.	Do.	Do.	No. 1	Do., and Lady Grange.	Do.	5	51	12×5	390	4×5	390	2	1,300	14	8,820	Fur.	N.F.	
					No. 2	Coxrod	Do.	7	46	5½×8	396	5½×5	396	1	968	24	6,650	Steam	N.F.	"Dook" Engine.
Do.	Watsonville	Dalzel	Lanark	Jno. Strain	No. 1	Ell	Stoop and room	17	109	—	462	14½×6	296	—	2,500	40	7,000	Fur.	F.	No. 1 Motherwell is the upcast.
Do.	Parkhead	Do.	Do.	Do.	No. 1	Ell	Do.	16	77	11½×6	363	10½×6	370	1	1,100	40	22,000	Fur.	F.	
					Lady Emily or No. 2.	Do.	Do.	17	124	15×6	528	10½×6	546	1	2,750	36	15,000	Fur.	F.	
Do.	Motherwell	Hamilton	Do	Do.	No. 1	Ell	Do.	14	58	—	—	14½×6	296	1	1,600	36	14,000	Fur.	F.	
					No. 2	Do., Splint	Do.	13	75	14½×6	480	14½×6	296	—	1,000	36	8,000	Fur.	F.	
					No. 3	Do.	Do.	12	85	18×6	460	—	—	—	3,000	40	7,000	Fur.	F.	
					No. 4	Splint	Do.	2	6	14½×6	420	—	—	—	200	40	500	Fur.	F.	
Watt, James	South Arnloss	Slamannan	Stirling	Wm. Wilkie	No. 1	Coxrod	Long wall	6	47	8½	150	5½	150	—	2,500	9	3,900	Fur.	N.F.	
					No. 2	Splint	Do.	4	18	7	90	7	90	—	1,030	9	2,800	Fur.	N.F.	
Wemyss, James Hay E. (Trustees of late).	Wemyss	Wemyss	Fife	Wm. Carey	Victoria	Bowhouse	Do.	85	295	21½×5½	312	—	—	2	2,862	25	22,543	Fur.	N.F.	
					Lady	Brankstone				—	—	14×5	432	—	—	—	—	—	—	
					Hugo	Parrott	Do.			9×5½	299	5×5½	299	2	1,187	30	14,918	Fur.	N.F.	
West Calder Oil Co. (Limited).	Woolfords	West Calder	Edinburgh	John Weir	No. 1	Hurlett	Do.	4	3	11×5½	144	6½×6½	90	—	—	—	—	—	—	Not working.
West Badallan Coal Co.	West Badallan	Shotts	Lanark	Robt. Gilmour	No. 1	Gin Seam	Do.	2	8	7×5½	78	5×5½	78	—	460	25	4,500	Nat.	N.F.	
West of Fife Coal Co.	Muircockhall	Dunfermline	Fife	Henry Ness	No. 1	Splint	Do.	24	123	—	—	17½×6	552	3	—	48	29,140	Fur.	N.F.	
					No. 2	5 feet	Do.	—	—	13½×6	612	—	—	—	—	—	—	—	—	
Weir, Robt., & Sons	Barblues	New Monkland	Lanark	Hugh Stewart	No. 1	Virtuewell	Do.	2	10	4	96	4	96	—	110	12	1,500	Nat.	N.F.	Sinking.
					No. 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
					No. 3	Lower Drumgray	Do.	6	21	7½×5	168	5×5	160	—	140	12	2,000	St. jet	F.	
White, Elizabeth	Ormiston Hall	Ormiston	Haddington	Andrew White	No. 2	Splint	Do.	3	33	11×5	120	11×5	84	—	300	12	1,350	Fur.	N.F.	
Whitelaw, John	Fountainhall	Pencaitland	Do.	Alex. Smith	Nos. 3 & 4	Rough and Splint	Do.	3	20	10×5	58	6×5	68	—	560	18	4,400	Fur.	N.F.	
Wilson, W. & J.	Standrig	Muiravonside	Stirling	Queen		Coxrod	Do.	10	—	12×5	288	12	240	—	600	16	1,900	Fur.	N.F.	
						Splint	Do.	—	15	—	—	—	—	—	—	—	—	—	—	
Wilson, John	Bantaskine & Zetland.	Polmont	Do.		Greenwells	Coxrod	Do.	4	14	5×5	132	5×5	162	—	800	18	1,100	Fur.	N.F.	
Wilson, John	Overtown	Cam'nethan	Lanark	Henry Telfer	No. 2	Splint, 4′	Stoop and room	20	45	5½×6	372	5½×6	372	1	1,900	16	15,000	Fur.	F.	
					No. 3	Ell, 9′	Do.	18	80	14×5½	504	—	—	—	3,000	25	20,500	Fur.	F.	
					No. 3	Main	Do.			—	—	14×5½	576	—	3,000	25				

List of Coal Mines, with the Mode of Working, Ventilation, &c., during the Year 1875—*continued*.

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Wilson, John	Law	Carluke	Lanark	Henry Telfer	No. 1	Ell	Stoop and room	6	55	—	—	6×5	216	—	400	20	14,000	Fur. St. jet	F.	
					No. 1	Main, 4′ 4″	Do.			7½×5	312	6×5	312		1,800	20				
					No. 1	Splint, 7′	Do.			—	436	6×5	436		1,000	36	10,000	—	F.	
					No. 2	Ell Main	Do.	3	20	14×6	380	4½×6	380	—	2,000	40	30,000	—	F.	Fan, 12′ diam., 60 revol. per min.
					No. 3	Virtuewell	Long wall	2	6	8×5	180	11×6	42	—	1,500	18	7,500	Fur.	F.	Downcast is an incline plane.
Do.	Shawfield	Carluke	Do.	Do.	No. 1	Ell	Stoop and room	22	105	11×6	96	15½×6	372	1	4,480	40	16,000	Fur.	F.	
						Main	Do.			—	—		468	1	4,450	40	14,000	Fur.	F.	
Wilson, George, & Co.	Kinneil	Bo'ness	Linlithgow	William White	No. 1 or Mingle	Parrot, 3′	Long wall	17	45	8×5	396	5×4	342	—	2,062	16	5,725	Fur.	F.	Fur. at No. 2.
					Snab	Splint, 3′	Do.	2	12	14×5½	340	9×5½	444	1	866	14	3,460	Fur.	F.	Do.
					No. 2, or Burn	Red Coal	Do.	7	36	8×5	300	5×4	270	1	2,293	16	3,565	Fur.	F.	
					No. 13	Splint	Do.	3	15	14×5½	330	5×4	180	—	1,583	12	1,560	Fur.	F.	
					Schoolyard	Parrot	Do.	10	28	6×6	438	9×5	438	—	922	16	4,950	Fur.	F.	
					Do.	Foul Coal	Do.	—	—	8×7½	438	8½×7½	432	—	1,000	16	7,800	Fur.	F.	
					No. 18, Lothians	Smithy	Do.	13	52	14×6	504	5×5	366	—	1,925	12	4,020	Fur.	F.	Chance and Burn Pits also upcasts for this.
					No. 18, do.	Main	Do.	—	—	18×5½	510	8½×7½	432	—	2,200	12	9,300	Fur.	F.	
					No. 21, Chance	Smithy	Do.	4	19	6×5	360	6×4½	360	—	660	16	3,010	Fur.	F.	
Wishaw Coal Co.	Dalzell	Dalzell	Lanark	Alex. Williamson	Broomside	Ell	Stoop and room	13	95	13×6	300	6×6	300	1	2,200	60	19,870	Fur.	F.	
						Main	Do.	—	—	—	372	—	372	—	440	48	9,700	Fur.	F.	
Wishaw Estate	Woodmuir	West Calder	Do.	—	No. 2	Wilsontown Main	—	4	13	7½×5½	330	6×5½	330	—	100	25	2,000	Nat.	N.F.	Com. Oct. 1875.
						Woodmuir Main	—	4	14	—	—	—	—	—	666	20	3,500	Nat.	N.F.	Stopped temporarily.
Woods, W. & R.	Prestonhall	Cranston	Edinburgh	—	No. 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Wood, James	Barbauchlaw	Bathgate	Linlithgow	Alex. Russell	No. 7	Main	Long wall	7	60	16×5	246	16×5	242	—	1,200	25	9,500	Fur.	N.F.	
					No. 11	Coxrod and Upper Cannel	Do.	5	36	13×5½	126	7×4½	66	—	250	20	8,000	Fur.	N.F.	
Do.	Bathville	Do.	Do.	Do.	No. 1	Main Coal	Long wall	—	—	—	—	13×5½	191	—	—	—	—	—	N.F.	
					No. 3	Do., 3′ 5″	Do.	6	46	15×5½	270	15×5½	336	—	800	20	7,000	—	N.F.	
					No. 4	Colinburn	Do.	—	—	13×5½	292	—	—	—	—	—	—	—	N.F.	
					No. 5	Main Coal	Do.	—	—	12×5½	221	—	—	—	—	—	—	—	N.F.	
					No. 9	Upper Cannel	Stoop and room	—	—	—	—	13×5½	58	—	—	—	—	—	N.F.	
					No. 10	Do.	Do.	—	—	10×5½	48	—	—	—	—	—	—	—	N.F.	
Do.	Shieldmuir	Dalzell	Lanark	Arch. Robertson	No. 1	Main	Do.	18	93	7½×5½	576	5×5½	450	1	2,495	16½	18,000	Fur. Steam	F.	
						Splint	Do.	—	—	—	—	—	—	—	—	—	—	—	—	
Wyper, P. & R.	Cleland Townhead	Bothwell	Lanark	J. Wyper	No. 1	Ell Coal	Stoop and room	13	48	7½×5½	145	5×5½	145	—	600	48	10,000	Fur.	N.F.	
					No. 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Re-opening.
Williams, John, & Co.	Camp	Dalzell	Lanark	Alex. Littlejohn	No. 2	Splint	Do.	13	97	12½×6	438	3½×6	477	1	600	45	20,000	Fur.	F.	
					No. 1	Pyotshaw, 3′	Long wall	—	—	—	—	—	—	—	—	—	—	—	—	No. 1 pit stopped temporarily.
Yooll, A. Graham	Kelly & Balcorma	Carnbee	Fife	—	Kelly	Kelly Coal	Do.	4	17	10×4½	216	10	126	1	530	24	3,000	Fur.	N.F.	
					Kilrenny	Pitcorthie	Do.	8	14	10×4½	—	5×4½	18	—	400	16	5,200	Nat.	N.F.	
Young, Robt.	Greenhill	Shotts	Lanark	Jno. McDonald	No. 7	Drumgray	Do.	4	15	7×5	246	5×5	246	—	280	30	2,400	Fur.	F.	
					No. 8	Virtuewell	Do.	—	—	8×5	210	5×5	180	2	1,333	30	2,000	Fur.	F.	
					No. 9	Do.	Do.	9	80	8×5	342	5×5	342	2	3,333	30	8,400	Fur.	F.	
					No. 10	Steam	Stoop and room	3	14	10×5	60	4×5½	60	—	100	48	2,500	Fur.	F.	
					No. 11	Do.	Do.	—	—	6½×5	108	4×5	108	—	200	48	3,000	Fur.	F.	

List of Coal Mines, with the mode of Working, Ventilation, &c. during the year 1875—*continued.*

Name of Owner.	Name of Colliery.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
															yards.	feet.				
Young's Paraffin Light and Mineral Oil Co., Limited.	Addiewell - -	West Calder -	Edinburgh -	Thos. Prentice -	No. 15, Baads	Houston - -	Long wall -	—	—	—	—	—	—	-	—	—	—	—	—	Stopped.
					No. 16, Muirhall	Hurlet - -	Do. -	9	60	10×5	180	15×5	180	-	1,560	30	20,000	Fur.	F.	
					No. 18, do.	Houston - -	Do. -	—	—	9×5	180	12×5	60	-	3,000	20	15,000	Fur.	F.	Stopped.
					No. 19, do.	Hurlet - -	Do. -	3	3	15×6	312	12×6	120	-	260	30	5,000	Fur.	F.	
Young, Jno., & Co.	West Drumgray -	New Monkland -	Lanark -	Robt. Young -	No. 1 - -	Virtuewell - -	Do. -	6	30	5×6	150	6×5	150	-	1,000	14	1,840	Fur.	F.	
					No. 2 - -	Do. - -	Do. -	2	32	5×5	108	5×5	108	1	660	15	1,880	Fur.	F.	

List of Ironstone Mines, with the Mode of Working, Ventilation, &c., during the Year 1875.

Name of Owner.	Name of Mine.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.							
Addie, Robt., & Sons	West Benhar -	Shotts - -	Lanark -	Jas. Gray -	No. 1 - -	Slaty band -	Long wall -	20	114	—	—	16×6	696	-	3,800	38	32,036	Fur.	F.	
					No. 2 - -	Do. - -	Do. -	—	—	10×6	660	—	—	-	—	28	—	Fur.	F.	
					No. 3 - -	Do. -	Do. -	14	86	16×6	696	16×6	696	-	—	31	8,236	Fur.	F.	
Baird, Wm., & Co.	Stand - -	New Monkland -	Do. -	- - -	No. 4 - -	- - -	Do. -	10	71	13×5	150	13×5	144	-	1,500	12	2,496	Fur.	F.	
Barr and Higgins	Langbyres -	Shotts - -	Do. -	Thos. Lithgow -	No. 2 - -	Bellside - -	Do. -	5	18	9½×5½	270	5×5½	270	1	370	7	1,500	Fur.	F.	
Do. - -	Bowhousebog -	Do. - -	Do. -	Do. -	No. 2 - -	Slaty band -	Do. -	4	23	8×5	30	10×5	48	-	350	20	1,900	Fur.	N.F.	Not working.
Carron Co. - -	Valleyfield -	Torryburn - -	Fife - -	Alex. Clelland -	No. 1 - -	- - -	Do. -	25	98	15×5	540	14×6	540	1	1,309	10	6,720	Steam	N.F.	
Do. - -	Blairhall - -	Culross - -	Perth - -	Do. -	No. 2 - -	- - -	Do. -	15	45	9×6	498	8×6	498	1	713	12	7,000	Fur.	N.F.	
Do. - -	Drumshangie -	New Monkland -	Lanark -	Do. -	No. 1 - -	Airdrie Black band	Do. -	11	37	13×5	102	13×5	84	-	814	20	3,090	Fur.	F.	
Coltness Iron Co. -	Braidwood -	Carluke - -	Do. -	Robt. Watt -	No. 1, Mayfield	3, 5, and 7 feet -	Do. -	10	81	19×5½	276	12×5	120	1	2,566	30	16,042	Fur.	N.F.	Fur. above ground,
					No. 2, do.	Do. - -	Do. -	10	74	14×6	407	6×3½	407	-	590	36	21,577	Fan	N.F.	Fan 17′×6′.
					Wilton - -	Do. - -	Do. -	13	82	18×5½	240	10×5	168	2	3,560	30	12,000	Fur.	N.F.	} Do. do.
								—	—	—	—	10×5	108	-	—	—	—	Fur.	N.F.	
Do. - -	Hallcraig - -	Do. - -	Do. -	Do. - -	Hallcraig -	5 and 7 feet -	Do. -	12	65	8×6	120	18×5½	270	2	610	22	16,860	Fur.	N.F.	
Do. - -	Crofthead - -	Shotts - -	Do. -	Robt. Dewar -	Harthill -	Slaty band -	Do. -	24	172	21×7	789	7×4	834	2	1,408	22	17,000	Fur.	F.	
Do. - -	Polkemmet -	Whitburn -	Linlithgow -	Do. -	Polkemmet -	Do. -	Do. -	13	201	21×7	756	7×4	786	1	1,881	24	20,000	Fur.	F.	

List of Ironstone Mines, with the Mode of Working, Ventilation, &c., during the Year 1874—*continued*.

Name of Owner.	Name of Mine.	Where situated. Parish.	Where situated. County.	Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed. Above Ground.	No. of Persons employed. Below Ground.	Size and Depth of Downcast and Upcast Shafts. Downcast. Size in Feet.	Downcast. Depth in Feet.	Upcast. Size in Feet.	Upcast. Depth in Feet.	Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
															yards.	feet.				
Coltness Iron Co.	Muirhead - -	Shotts - -	Lanark -	Robert Dewar -	Muirhead -	Slaty band -	Long wall -	13	34	21×7	684	7×4	696	–	770	24	4,500	Fur.	F.	Sinking.
Do. - -	Salisburgh - -	Do. - -	Do. -	David Muir -	Duntilland No.1	Goodockhill -	Do. -	7	17	11×6	388	6×5	404	–	1,520	24	5,100	Fur.	F.	
					Do. No.2	Do. - -	Do. -	6	12	13×6	376	6×5	402	1	1,800	30	7,500	Fur.	F.	
					Drumbowie No.1	Do. - -	Do. -	8	20	11×6	315	6×5	329	1	2,330	34	5,860	Fur.	F.	
					Mountcow -	Do. - -	Do. -	8	17	6×5	324	11×6	341	1	1,460	20	4,900	Fur.	F.	
Do. - -	Muldron - -	West Calder -	Edinburgh -	Geo. McCulloch	No. 6 - -	Curley - -	Do. -	—	—	11×5½	72	4×5½	94	–	—	—	—	—	—	
					No. 8 - -	Do. - -	Do. -	17	50	12×5½	84	5½×3½	92	–	2,222	22½	8,899	Fur.	N.F.	
					No. 9 - -	Do. - -	Do. -	9	36	12×5½	108	5½×3½	146	–	1,776	22½	8,849	Fur.	N.F.	
Do. - -	Woodend -	Torphichen - -	Linlithgow -	Jno. Stevenson -	No. 2 - -	Black band -	Do. -	9	61	9×5	303	5×5	321	–	559	26	5,550	Fur.	N.F.	
					No. 5 - -	Clay band and Coal	Do. -	—	—	12×6	228	6½×6	246	–	—	—	—	Fur.	N.F.	
						Black band -	Do. -	10	80	12×6	330	6½×6	348	1	572	36	10,140	Fur.	N.F.	
Deans and Moore	Penstone - -	Gladsmuir -	Haddington -	Jas. Henderson	Penstone -	- - -	Do. -	10	15	14×5	30	14×5	30	–	400	30	8,000	Fur.	N.F.	
Dixon, William, (Limited).	Fauldhouse -	Whitburn -	Linlithgow -	Thos. Nimmo -	No. 8 - -	Slatey band -	Do. -	20	60	15½×7	750	7×6½	750	1	1,418	24	11,926	Fur.	N.F.	
					No. 9 - -	Do. -	Do. -	17	127	8½×6½	720	6½×6½	720	1	1,330	24	13,666	Fur.	N.F.	
Dunlop, Colin, & Co.	Auchlochan -	Lesmahagow -	Lanark -	Robt. Spiers, jun.	No. 2 - -	Black band -	Do. -	11	54	8×5	180	5×5	180	1	300	12	9,000	Fur.	F.	
Do. -	Quarter - -	Hamilton - -	Do. -	Do. -	Boghead No. 3	Clay band -	Do. -	5	40	4½×4½	126	4½×4½	126	–	2,000	15	4,140	Fur.	N.F.	
					Thinacre Mine	Do. - -	Do. -	—	—	6×4½	—	3	30	–	410	12	1,500	Fur.	N.F.	
					Boghead No. 4	Do. - -	Do. -	5	24	4½×4½	129	4½×4½	129	–	200	30	3,500	Nat.	N.F.	
Do. -	Crossbasket -	Blantyre - -	Do. -	Do. -	Crossbasket -	- - -	Do. -	—	—	5×4½	138	5×4½	126	–	990	16	2,400	Fur.	N.F.	
Do. -	Greenhall - -	Do. - -	Do. -	Do. -	No. 1 - -	- - -	Do. -	16	128	7×5	99	5×5	99	–	1,900	15	6,000	Fur.	N.F.	
					No. 2 - -	- - -	- - -	—	—	5½×5½	129	5½×5½	129	–	430	16	4,100	Fur.	N.F.	
Dunlop, James, & Co.	Blantyre - -	Do. - -	Do. -	Peter Niven -	No. 1 - -	Clay band -	Do. -	12	45	7×5	108	5×5	118	2	650	22	5,800	Fur.	N.F.	No. 2 sinking.
Do. - -	Blantyre Park -	Do. - -	Do. -	Do. - -	No. 1 - -	Do. - -	Do. -	16	60	12×5	120	7×5	140	2	700	22	10,000	Fur.	N.F.	No. 2 sinking.
Do. - -	Dykehead -	Hamilton - -	Do. -	Do. - -	No. 1 - -	Do. - -	Do. -	13	45	7½×5	192	4½×5	202	2	760	22	7,000	Fur.	F.	
Forsyth, William	Roughcraig -	New Monkland -	Do. -	W. Forsyth -	No. 2 - -	Black band -	Do. -	4	30	6×5	130	4×5	130	–	150	16	5,000	Fur.	F.	
Glasgow Iron Co.	Braidwood -	Carluke - -	Do. -	- - -	No. 30 -	Raes Gill - -	Do. -	13	48	7½×5½	260	5×5½	278	–	1,490	18	2,602	Fur.	F.	
Do. - -	Gilmerton -	Liberton - -	Edinburgh -	John McGowan	No. 22 - -	No. 2, Ironstone -	Do. -	7	26	11½×5¾	360	8×5	180	1	533	24	7,237	Fur.	N.F.	
				Do. -	No. 25 -	- - -	- - -	—	—	—	—	—	—	–	—	—	—	—	—	Sinking.
Do. - -	Rosslyn - -	Lasswade - -	Do. -	Do. -	No. 1 - -	- - -	- - -	—	—	—	—	—	—	–	—	—	—	—	—	
Do. - -	Drummaird -	Kennoway -	Fife - -	Jos. Thomson -	No. 33, Kilmux	——	——	—	—	—	—	—	—	–	—	—	—	—	—	
Jackson Thomas	Stand - - -	New Monkland -	Lanark - -	Alex. Blackadder	No. 3 - -	Black band -	Long wall -	—	—	5×5½	138	7½×5½	146	–	100	31	2,000	Nat.	N.F.	No 8 (coal) pit is the upcast.
Merry and Cuninghame.	Carnbroe - -	Bothwell -	Do. -	- - -]	No. 10 - -	Palace craig -	Do. -	—	—	11×4½	570	11×4½	570	–	1,122	27	3,240	Fur.	F.	
Do. - -	Milton Lockhart -	Carluke - -	Do. -	Wm. Wilson -	Shieldhill -	Clay band -	Do. -	—	—	15×5½	414	5½×2½	414	–	1,584	20	5,320	Fur.	N.F.	

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List of Ironstone Mines, with the Mode of Working, Ventilating, &c., during the year 1875—*continued.*

Name of Owner.	Name of Mine.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery, or Non-fiery.	Remarks.
										Downcast.		Upcast.								
		Parish.	County.					Above Ground.	Below Ground.	Size in Feet.	Depth in Feet.	Size in Feet.	Depth in Feet.		yards.	feet.				
Monkland Iron and Coal Co. (Limited).	Armadale	Bathgate	Linlithgow	Robt. Martin	No. 15 No. 16	Black band Rough band	Long wall Do.	10 10	37 47	7½×5 6×5½	300 192	5×5 4½×5½	320 208	– –	700 860	16 16	2,560 2,400	Fur Fur.	N.F. N.F.	
Do.	Chapelhall	New Monkland	Lanark	Jas. Muir	Nos. 4 and 5 No. 7	Calder Braes Do.	Do. Do.	11 4	58 24	9×5½ 12×5 7×5½	780 660 108	5×5½ 4×5 5×5½	792 678 120	1 1 –	900 1,200 200	18 18 16	13,000 14,000 15,000	Fur. Fur. Fur.	F. F. F.	Coal worked also.
Do.	Bankend	Lesmahagow	Do.	John Adam	Nos. 5 and 10	B. B. and Clay band	Do.	5 4	18 14	12×5 12×5	120 132	6×4 12×5	42 96	– –	802 446	24 24	1,200 900	Fur. Nat.	N.F. N.F.	
Rankine, Jno.	E. Greengairs	New Monkland	Do.	John Murray	No. 14	Black band	Do.	3	16	7×5½	72	5×5½	84	–	528	6	600	Fur.	N.F.	Stopped.
Rankine, Patrick	Darngavil	Do.	Do.	Peter Brown	No. 11	–	–	—	—	—	—	—	—	–	—	—	—	—	—	Re-opening.
Shotts Iron Co.	Arden	Do.	Do.	James Morton	Arden	Slaty band	Do.	14	46	8×6	498	6×5	522	2	1,048	22	7,851	Fur.	F.	
Do.	Browmieside	Do.	Do.	Do.	Browmieside	Do.	Do.	14	60	15×6½	648	6½×5	678	1	1,035	24	10,760	Fur.	F.	
Do.	Shottsmyres	Shotts	Do.	Jas. Ormiston	Shottsmyres	Black band	Do.	10	30	5½×5	432	11½×5¼	432	1	635	24	3,278	Water	N.F.	Abandoned.
Do.	Polkemmet	Whitburn	Linlithgow	Robt. Jamieson	No. 5 No. 9	Do. Do.	Do. Do.	30 24	55 48	5×7 7×5	264 132	5×5 5×5	162 162	– –	700 600	30 30	4,000 4,000	Fur. Fur.	N.F. N.F.	
Do.	Harthill	Do.	Do.	Do.	No. 1	Do.	Do.	8	18	7×5	288	5×4½	295	–	400	25	2,500	Fur.	N.F.	
Do.	Handaxwood	Shotts	Lanark	Jas. Ormiston	No. 1 No. 3	– Gin Ironstone	Do. Do.	3 —	4 —	7×5½ 9×5½	64 66	5×5½ 5½×3	64 66	– 1	130 240	20 18	1,500 8,170	Nat. Fur.	N.F. N.F.	
Do.	Kingshaw	Carluke	Do.	Jas. Morton	No. 5 No. 8 No. 10	8′ and 5′ Ironstone Do. Do.	Do. Do. Do.	4 4 4	17 24 25	8½×4½ 7×4½ 4½×4	138 90 22	4½×4½ 5×4½ 5×5	153 108 96	– – –	500 320 360	25 30 16	2,500 3,850 3,000	Fur. Fur. Nat.	N.F. N.F. N.F.	
Do.	Pennicuik	Pennicuik	Edinburgh	Do.	No. 1 Mine No. 2 No. 3 Greenlaw Eastfield	Black band Do. Do. – –	Do. Do. Do. – –	4 7 4 7 6	8 11 6 7 15	6×5 6×5 7×5 9×5½ 20×8	247 360 115 151 24	8½×5 6½×5 6×5 4×5½ 6×8	240 360 115 151 24	– – – – –	210 120 180 — —	25 25 25 — —	1,200 1,500 900 — —	Steam Steam Nat. — —	N.F. N.F. N.F. — —	Sinking.
Do.	Loanhead	Lasswade	Do.	Jas. Prentice	No. 1	Black band	Do.	30	124	10½×6	600	12×5½	276	1	1,216	25	4,893	Nat.	N.F.	
Struthers, Jas., and Co.	Dykehead	New Monkland	Lanark	R. McAllister	No. [illegible]	Mussel band	Do.	—	47	4½×5	96	5×3½	121	2	300	20	1,950	Fur.	F.	
Summerlee Iron Co.	Dunsyston	Shotts	Do.	S. Macdonald	No. 1	Slaty band	Do.	6	17	11½×5½	288	5½×4½	288	–	750	30	4,000	Fur.	F.	
Wilson, George, & Co.	Kinneil	Bo'ness	Linlithgow	Wm. White	No. 1 Snab No. 4 No. 24 Store	Upper Ironstone Do. Do.	Do. Do. Do.	18 4 14	86 9 52	15½×5½ 9½×6 10×7	540 252 90	9×5½ 12×4½ 18×6	444 330 450	– – –	3,066 1,100 2,266	16 12 16	9,500 2,375 8,430	Fur. Fur. Fur.	N.F. N.F. N.F.	

List of Shale Mines, with the Mode of Working, Ventilation, &c., during the Year 1875.

Name of Owner.	Name of Mine.	Where situated.		Name of Manager.	Name of Pit or Mine.	Name of Seam and Thickness.	Mode of Working.	No. of Persons employed.		Size and Depth of Downcast and Upcast Shafts.				Number of Splits.	Average Length of Air-ways.	Sectional Area of Air-ways.	Average Total Quantity of Air in Feet per Minute.	Mode of Ventilation.	Fiery or Non-fiery.	Remarks.
		Parish.	County.					Above Ground.	Below Ground.	Downcast. Size in Feet.	Downcast. Depth in Feet.	Upcast. Size in Feet.	Upcast. Depth in Feet.							
															yards.	feet.				
Bell, Robert	Broxburn	Uphall	Linlithgow	Thos. Bell	So. Greendykse Mine.	Shale	Long wall	8	66	6×6	—	6×7	78	1	400	48	10,000	Fur.	N.F.	Downcast is a mine.
					N. Greendykes Mine.	Do.	Do.	—	—	6×7	—	—	—	—	—	—	—	—	—	
Dalmeny Oil Co. (Limited).	Dalmeny	Kirkliston	Edinburgh	James Jones	No. 2	Do.	Do.	4	56	9	142	9	30	—	1,040	49	8,100	Fur.	N.F.	
Oakbank Oil Co.	Oakbank	West Calder	Do.	R. Calderwood	No. 1	Do.	Do.	23	86	6	120	6	120	—	1,500	25	15,000	Fan.	F.	Fan 6′ diameter.
Uphall Mineral Oil Co. (Limited).	Hopetown	Uphall	Linlithgow	Henry Terris	No. 1	Bells Shale	Do.	5	35	11½×5⅔	60	6×4¾	30	1	672	26½	29,750	Fur.	F.	
					No. 2	Do.	Do.	4	28	13½×5½	72	5×5	60	—	380	27	21,450	Fur.	F.	
Do.	Boghall	Bathgate	Do.		No. 3	Fells Shale	Do.	9	45	13½×5½	294	5½×3	270	—	860	16	43,500	Fan	F.	"Schiele" fan.
					No. 4	Do.	Do.	4	16	12½×5½	132	5½×4	102	—	120	16	8,430	Fur.	F.	
West Calder Oil Co. (Limited).	Gavieside	West Calder	Edinburgh	John Weir	No. 1 Mine	Fells Shale, 3′ 11″	Do.	16	73	7×8	990	4×4	—	1	1,120	16	7,200	Fur	F.	Length of downcast mine given in column for depth.
					No. 2 Pit	—	—	—	—	—	—	5×11	90	—	—	—	—	—	—	
					No. 3	Raeburns Shale	Do.	5	56	5×11	150	—	—	1	1,439	16	6,420	Fur.	F.	
Westfield of Capledrae Oil Co. (Limited).	Westfield of Capledrae.	Ballingray	Fife	And. Terris	No. 1 Mine	Westfield Shale	Do.	16	18	5½	600	5	36	2	300	42	8,600	Nat.	N.F.	Length of mine given.
Young's Paraffin Light and Mineral Oil Co. (Limited).	Addiewell	West Calder	Edinburgh	Thos. Prentice	No. 1 Muirhall	Thick Shale	Do.	6	15	13×6	600	11×6	600	—	600	24	3,000	Fur.	F.	
					No. 2 do.	Do.	Do.	18	106	13×6	492	11×6	306	1	1,600	20	40,000	Fur.	F.	
					No. 7 Polbeth	Do.	Do.	—	—	12×6	190	12×6	170	1	900	19	18,000	Fur.	F.	Stopped working.
					No. 8 do.	Do.	Do.	—	—	15×6	262	8×6	420	2	750	20	32,000	Fur.	F.	
					No. 10 do.	Do.	Do.	8	65	12×6	190	12×6	170	1	1,500	25	30,000	Fur.	F.	
					No. 11 do.	Do.	Do.	15	97	16×6	420	8×6	420	1	1,330	17	25,000	Fur.	F.	
					No. 12 Westwood	Do.	Do.	7	46	7½×6	144	4×4	144	1	1,100	14	15,000	Fur.	F.	
					No. 13 do.	Do.	Do.	10	69	11×6	204	4×4	144	1	1,100	15	20,000	Fur.	F.	
					No. 15 Baads	Do.	Do.	11	31	14×6	600	7×6	600	—	1,100	20	20,000	Fan.	F.	Fan 16′×5′ 6″.

List of Fire-clay Mines, with the Mode of Working, Ventilation, &c., during the Year 1875.

Dunnachie, Jas.	Star	New Monkland	Lanark		No. 1	Glenboig, 6′	Stoop and room	3	17	6½×5½	102	5½×5½	102	—	543	72	—	Steam	N.F.	
Glenboig Fire Clay Co.	Glenboig	New Monkland	Lanark		No. 1 and Mine	Do.	Do.	3	26	13×6	78	—	—	—	530	65	2,760	Nat.	N.F.	
Wilson, Alex., & Co.	Lockhead	Dunfermline	Fife	R. Hamilton			Do.	3	7	8×4	70	6×4	60	—	60	60	10,000	Nat.	N.F.	

List of Mines classed under the Metalliferous Mines Regulation Act in Eastern District of Scotland in 1875.

Owner or Company.	Name of Mine.	Where situated.	Remarks.
Henry Aitken	Bathgate (not working)	Linlithgow	Nickel silver.
	Feedonald (not working)	Argyleshire	Lead ore.
	Strontian (not working)	Ditto	Ditto.
	Loch Tay (not working)	Perthshire	Ditto.
	Tyndrum (not working)	Ditto	Ditto.
Leadhills Mining Co.	Leadhills	Lanarkshire	Lead ore.
Coltness Iron Co.	Garleton	Haddington	Hematite ore.
John Walker, Edinburgh	Sandlodge	Shetland	Iron ore.
Coltness Iron Co.	Mayfield	Lanarkshire	Limestone.
Merry and Cunninghame (Limited)	Milton Lockhart	Ditto	Ditto.
Shotts Iron Co.	Kingshaw	Ditto	Ditto.
John Haig and Co.	Nellfield	Ditto	Ditto.
Nitshill and Lesmahagow Co.	Netherton	Ditto	Ditto.
Jonathan Hyslop	Cobbinshaw	Edinburgh	Ditto.
Sir David Baird, Bart.	Burdie House	Ditto	Ditto.
William Torrance	Camps	Ditto	Ditto.
T. and J. Thornton	Leavenseat	Ditto	Ditto.
Henry Mungal	Lathalmond	Fifeshire	Ditto.
Clerk, Sir Geo., Bart.	Brunstane	Edinburgh	Ditto.
Robt. Ure	Dykehead	Lanark	Ditto and cement.
And. McLean	Auchren	Ditto	Limestone.
	Mutton Hole, Pathhead	Edinburgh	Ditto.
	Hope, Ditto	Ditto	Ditto.
Harris, Brothers	Dunkeld	Perthshire	Slate.
	Birnum	Ditto	Ditto.
	Magazine, Dalkeith	Edinburgh	Limestone.

Mr. Alexander's Report.

REPORT upon the INSPECTION OF MINES in the WESTERN DISTRICT of SCOTLAND, for the Year ending 31st December 1875, by WILLIAM ALEXANDER, Esq.

SIR, Glasgow, 30th March 1876.

I HAVE the honour to lay before you my Annual Report upon the collieries and mines in the western mining district of Scotland. By the late Acts every mine is now brought within the scope of inspection, the only exception being where the mine is near the surface and worked without the aid of artificial lights.

The statistics now furnished supply reliable information as to the annual exhaustion of our mines, and exhibit the variations of labour brought about, or caused by commercial prosperity, restriction of labour, or otherwise. The following statement, which shows the produce of coal during the last five years, will illustrate this.

	Persons.		Tons.		Tons.	
In 1871,	19,561	produced	6,554,365,	equal to	335	per person employed.
„ 1872,	20,639	„	6,336,798,	„	307	„ „ „
„ 1873,	22,607	„	6,715,333,	„	297	„ „ „
„ 1874,	22,620	„	6,606,335,	„	292	„ „ „
„ 1875,	20,996	„	7,177,888,	„	342	„ „ „

that is, in 1875 there were 1,624 fewer persons employed than in 1874. Nevertheless, the produce of their labour was greater by 571,553 tons.

Speaking generally, the mining industry of the district has been moderately active, the gross out-put is in excess of former years; and placed in the following order it appears that the joint produce of 30,348 persons employed in the coal, ironstone, fire-clay, and shale mines, amounted to 9,067,145 tons.

	Persons employed.	Tons of Mineral Wrought.					
		Coal.	Ironstone.	Fire-clay.	Shale.	Pyrites.	Total.
Coal - -	20,996	7,177,888	—	—	—	604	7,178,492
Ironstone - -	8,954	—	1,642,002	—	—	—	1,642,002
Fire-clay and shale	398	—	—	200,337	46,314	—	246,651
	30,348						9,067,145

Though fortunately no widespread disaster has taken place, the usual number of casualties has not been diminished. In all, 276 accidents were reported, and of these 58 proved fatal; 45 in mines of coal, and 13 in mines of ironstone. These will be found shortly described in Schedules 1 and 2 annexed, and the following is an abstract of both.

	Explosions.	Falls of Roof and Sides.	In Shafts.	Miscellaneous and above ground.	Total.
In Coal - - - -	5	20	7	13	45
„ Ironstone - - -	—	6	5	2	13
	5	26	12	15	58

The loss of life from explosions of firedamp has been excessive. The first resulted from gross recklessness on the part of the sufferer, who went into a stone mine contrary to the orders of the oversman, for the purpose of removing his tools, and exploded a quantity of firedamp. The second happened in a limited working lately win by a stone mine, and in the act of being opened up. The deceased had worked a dayshift and left about midday. On their return in the afternoon they were the only persons in the pit, and after having been engaged for about three hours brushing their roadway, they proceeded to a wall a short distance from their own, and ignited some firedamp which had collected in it from the time of the day

workmen leaving, about three hours and a half before. Both were burned, and though not supposed to be dangerously ill, they died from the effects of their injuries two weeks after. The third took place in one of the ordinary working places, and while the workmen were engaged at their work. Attributable, it would appear, to a fall of roof in the aircourse, which occurred a short time before the accident, interrupting the air and thus allowing firedamp to collect. The explosion was reported to be slight, but the deceased died from the effects of his injuries eight days after. The fourth happened to a night fireman who, after examining the working places with a safety lamp, went incautiously into a mine connected with an old working, where "waste" water was being run off, with his open light and kindled some firedamp, by which he was fatally injured.

The falls of coal and roof are under the average of past years. As this description of accident varies very much one year with another, it will be sometime, at least five or ten years, before a proper average can be obtained and a fair comparison made.

I am hopeful that the late regulations, which provide for a more watchful superintendance on the part of the management, and have diminished the grounds for excuse on the part of the workmen, for neglecting to adopt precautionary measures because of the difficulty of obtaining a proper supply of wood, will have a salutary effect in reducing this class of accidents.

The casualties in shafts of a preventible kind are, I believe, decreasing, but not so fast as might have been anticipated considering the precautionary measures required to be observed at all pumping and winding shafts. One person fell from the surface, one was struck by the cage at a lower scaffold on the surface whilst looking down the shaft, one fell from a midworking, one fell from the cage when in the act of being drawn up the shaft, one was fatally injured by the breaking of a "clack piece" whilst engaged tightening up the "clack" door, and two lives were lost through improper signals, or some misunderstanding regarding them.

The appliances introduced at midworkings to prevent persons from falling into shafts have not hitherto been so thorough and effective as those adopted to prevent persons from falling into shafts from the surface. This, I believe, is partly owing to the difficulty in constructing an efficient appliance at a midworking which shall at all times act with unfailing certainty. By General Rule No. 14, "The top and all entrances between the top and bottom of every "working or pumping shaft shall be properly fenced." The question, what is a proper fence? has received some consideration of late in the Sheriff Court, Glasgow, in a case raised by the parents of a young man who lost his life in one of Messrs. Robert Addie and Sons' pits in 1872. And as the law can only interpret the law it may be of advantage to know the grounds upon which the decision in this case has been arrived at by Sheriff-substitute Clarke. The working in question, a very limited one, was in a thin seam of coal, and the shaft was ostensibly sunk for a seam of ironstone which underlay it about sixty fathoms. The following interlocutor and note explain the grounds of the decision:

"Glasgow, 28th February 1876. Having heard parties' procurators and made avizandum for the reasons set forth in the subjoined note: Finds that on or about the date libelled the pursuer's late son, Patrick Gunn, came by his death by and through the fault of the defenders or of those for whom they are responsible. Therefore, finds the defenders liable to the pursuers in damages, assesses the same at one hundred and twenty pounds sterling, and decerns against the defenders therefor: Finds the defenders liable to the pursuer in expenses, allows an account thereof to be given in, and remits the same when lodged to the auditor of court to tax and report and decerns."

(Signed) F. W. Clarke.

Note.—The evidence in this case is voluminous, but the facts which the sheriff-substitute considers decisive of the question are not numerous, and may be said to lie on the surface. At the pit in question there was at the date of the accident a midworking and a lower-working. The same shaft communicated with both, and it was the duty of the defenders, the owners of the pit, to take sufficient precautions that those employed at the midworking should, when bringing their hutches to the cage, be protected against the risk of falling down the shaft. Patrick Gunn, the deceased, a lad of nineteen years of age, and son of the pursuer, was a miner working at the midworking, and on the day in question he, with his hutch, was precipitated down the shaft, and killed on the spot. The question to be determined is, did this take place in consequence of the fault of the defenders? Was it a *damnum fatale* for which no one was answerable? Was it attributable to the fault of a *collaborateur*? Or was there contributory negligence? The defenders were bound to take all proper precautions, the best known, and if they did this they would be sufficiently exonerated whatever might eventuate. Now, it is in evidence that there were various means to which they could have resorted, any one of which, whatever might be its disadvantages, would have prevented the

accident in question. They might have placed a screen or scaffolding, or even logs, across the pitmouth at the said midworking, and any one of these contrivances would have rendered falling down the shaft a physical impossibility (see evidence). They might have resorted to a system of blocks and self-acting apparatus which would also, so far as can be seen, have given absolute protection against such an accident taking place (see evidence and model). The defenders did not adopt any of these methods for reasons that will afterwards be noticed, but betook themselves to a method known as that by a trapdoor and bottomer, a method which is perfectly safe, provided the principal part of the mechanism, viz., the bottomer, is fit for and does his duty. According to this system a door is placed in the workings some yards from the open shaft, and is made to open inwards towards the workings. When this door is shut it is physically impossible that either hutch or man can get into the shaft. It is therefore the duty of the bottomer to keep it always shut, except when the cage is down, and a hutch is coming to or leaving the cage. If the bottomer attends to his duty and works this door properly, no accident can occur of the kind in question, because no hutch can pass unless when the pitmouth is closed by the cage. It thus becomes evident that all depends in this method on the bottomer being a man in every way fit for his important duties. The defenders were not bound to adopt this method, for there were many others. They did adopt it, however, and they were in consequence bound to see that the organ upon whose proper working its value for safety entirely depended was sufficient; in other words, that the bottomer was fit for his duty, and if they failed in this, they can no more shelter themselves under the doctrine of *collaborateur* than if they had failed in providing a sufficient door. Now, in the present case, notwithstanding the adoption of the system of trapdoor and bottomer, the late Patrick Gunn, with his hutch, fell down the shaft and was killed. This of itself indicates something wrong with the apparatus, because if the door were shut and were sufficient such a thing could not have happened. That the door was sufficient there was no doubt, it is abundantly proved by the defenders. That the door was open at the time when it should have been shut is proved as distinctly as any fact in the case. Where, then, was the fault? Not in the inanimate part of the mechanism, but in the bottomer who failed in his duty, but who was just as much a part of the machine intended for the safety of the workmen as was the door itself. Now that the bottomer was totally unfit for his duty, and that the defenders must be held to have known that is patent all over the evidence. He was an old man who had met with a serious accident that seriously affected his motive powers. In no sense could he be called active or intelligent. A host of witnesses speak to this. Even those who speak of him as fit enough for the work are beaten from this in cross-examination. The very appearance of the man at the proof left no doubt of this in the mind of the sheriff-substitute.

Indeed, a perusal of his evidence will go far to show that the injuries he has received have not affected his physical powers only. It may be asked why the defenders chose the plan of trapdoor and bottomer in preference to all the other modes which were at their service. The reason is very obvious and fully brought out in the proof. Scaffolding in all its forms interfered with the rapid working of the pit, and might have seriously affected the out-put, self-acting apparatus was objectionable for the same reason. You could not use it if you required the hutches to ascend and descend at twenty miles an hour (see evidence). All these contrivances by which perfect safety from the risk of such an accident as occurred would have been secured were rejected by the defenders in favour of a method which was more conducive to their own interests. Surely in such a case they were bound to see that that method was properly carried out. In such a case as this, it is plain that the pleas of *damnum fatale* and *collaborateur* are entirely excluded by the facts. But it was argued strongly that here was a case of contributory negligence. The sheriff-substitute is unable to adopt this view. There is no evidence to show that the deceased was in fault at all. The only man who seems to indicate such a thing is the bottomer, McGuire.

For many reasons the sheriff-substitute attaches no weight to his evidence. Indeed, a mere perusal of his deposition, without the advantage of seeing him, will satisfy most minds that he is not reliable, and this becomes very certain when what he states is compared with Clark's deposition. The amount of damage has been calculated with reference to the actual loss by the death of the pursuer's son and also with reference to the injury done to the feelings of the pursuer. 120*l.* in that view seems a fair and moderate sum. F.W.C.

The defenders have appealed.

In my Report for 1872 several illustrations were given of appliances adopted at midworkings for the prevention of accidents in shafts, and up to this time I am not aware that such an accident has occurred at any place where one of these appliances has been introduced. The Act certainly does not define what a fence is. But by common consent the sort of fence now generally in use at the surface, or pitmouth, is a guard which cannot be neglected, because the cage on being lowered leaves it as a fence, and when raised to the surface, the

cage itself forms one. In the same way at midworkings, I am of opinion that the guard or fence should be constructed so that in the absence of the cage it should at all times form a fence to prevent persons from inadvertently going into, or falling down the shaft. A gate or door placed near the side of the pit is often introduced, but though an efficient bottomer may be in constant attendance it is occasionally left open, and under such circumstances instead of being a means of greater security is rather the reverse. Where it is *possible* to avoid putting on hutches at a midworking in an open shaft it should be done. Such a system *under any condition* is attended with danger, and when different seams require to be worked at the same time, unquestionably the safe way is to connect them by "crosscut" mines, so arranged that the whole produce can be raised from one or two landings, adapting a cage for each.

The accidents miscellaneous and above ground are greatly in excess of former years. One person was killed upon an incline, six were suffocated by gases, three were crushed by railway waggons, one got entangled with pumping machinery, one fell a few feet from a scaffold, and one was struck by parts of a fly-wheel which broke whilst in motion.

In ironstone mines the fatal accidents were twelve. Six were occasioned by falls of roof, five in shafts, of these two men were killed by overwinding, one by falling from a midworking and two from things falling down the shaft. From miscellaneous causes one was overrun and crushed by his hutch upon an incline, and one was struck by a stone whilst blasting, he having failed to retreat in time to a place of safety beyond the range of the blast.

The mines now brought under the provisions of the Metalliferous Mines Act produce lead, zinc ore, iron ore, gannister, freestone for building purposes, and limestone. And the returns show the number of persons employed and the rate of production for the two past years, as follows.

Year.	Underground.				Above Ground.							Total Underground and Above Ground.	Mining Produce in Tons.					
	Male Persons.				Ages 8 to 13.		Ages 13 to 18.		Ages above 18.		Total.		Lead.	Zinc Ore	Iron Ore.	Gannister.	Free stone.	Lime-stone.
	Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.								
1874	–	14	314	328	2	–	56	3	8	135	204	532	1,596	109	4,678	–	–	77,477
1875	–	23	583	606	3	–	53	–	3	164	223	829	1,501	65	4,089	750	68,000	92,653

Only one accident, resulting in the death of one person, took place in these mines for the year now gone; and was occasioned by a fall of roof in a freestone mine, the working of which is upwards of 30 feet high.

By the late change upon the enactment it is now placed in harmony with the Coal Mines Regulation Act, and the returns which, previous to 1876, were due in August, are now made on the 1st of February.

I shall now refer to a few of the more conspicuous cases of fatal accidents, for the purpose of detailing them more fully than the space will admit of in Schedules 1 and 2. The particulars are suggestive, and show how by trifling acts of neglect, or for want of ordinary forethought, some of the unfortunate occurrences of the past year have been produced.

Accident No. 6, *Schedule No.* 1, *was occasioned by gases given off from an underground fire.*

About the end of December 1874 an underground fire was discovered, not far from the bottom of the outlet pit. Several attempts were made to put it out, and after a time it was subdued, though not completely extinguished. At this stage it was thought advisable to endeavour to reach the extreme of the fire, and with that view a mine was commenced in the pillar of coal known as "pitbottom stoop." The fire was encountered near to the pit, and kept under control by water led in by a hose from the surface. As the mine advanced the ventilation was maintained by bratticing carried along the centre of it. On the day of the accident a fall of roof occurred about thirty feet from the face, where at the time four men were engaged. This (fall) broke the brattice, deranged the ventilation, and cut off the means of egress. The air which before the accident swept round the front of the brattice, carrying off the noxious gases, now reached no farther than the fall, and the deceased being entirely shut in by the fall were slowly suffocated. Of the four persons who were at work when the fall of roof took place, one was rescued from under the broken roof by a second shift of men, but nearly three hours had elapsed before the others could be reached, when they were found

dead. The survivor who had charge of the shift was a thoroughly practical man, and one of the deceased was the oversman of the pit.

Accident No. 11, *Schedule No.* 1, *was occasioned by an explosion of firedamp.*

The deceased was a miner, and I understand that he had a contract for forming a stone mine to prove the seam of coal to the west of a dislocation not far distant from the shaft. It appears that the contract had expired, and other arrangements had not been made. In consequence of which the mine had been abandoned, or was standing for nine days previous to the accident. On the day of the accident the deceased applied to the oversman for liberty to go into the mine to remove his "graith," or tools, which had been left there when the contract expired. He was referred to the fireman, who would first examine the mine and see that it was safe for persons to enter. The deceased, however, apparently trusting to his previous experience, descended the shaft, and without waiting for the fireman recklessly went into the mine with an open light and ignited some gas which had collected in it. The blast displaced the brattice, deranged the ventilation, and it was two hours after the explosion before the deceased could be relieved, when he was found dead or dying.

Accident No. 12, *Schedule No.* 1, *was occasioned by an explosion of firedamp.*

The deceased who were engaged in a limited working had left off work on the day of the accident about midday, but returned in the evening (5 o'clock) to "brush" their roadway. Their working place was situated at A on hand sketch, but it appears that they had left it at

Fig. 1.

8 o'clock and gone into the heading B, to obtain the use of some tools which they knew to be lying there, when their lights ignited a small accumulation of firedamp. They were both burned, and died two weeks after from the effects of the injuries. It appears that the oversman and others had worked with open lights in the heading B on the day of the accident, and had left it only half an hour (at 4.30) before the deceased returned to their work, and I understand were not aware of the presence of firedamp.

Accident No. 15, *Schedule No.* 1, *was occasioned by an explosion of firedamp.*

The deceased was engaged with others on the day of the accident in one of the ordinary working places of the mine. I understand that a fall of roof took place during the shift, which interrupted the circulation of the air. It is stated that the workmen on the "dip" side of the fall left off work immediately after it happened, and called upon their neighbours, of whom the deceased was one, to leave also. They, however, continued to work, when soon after a slight explosion took place; more than one was injured, but the deceased died a week after from the effects of the injuries.

Accident No. 21, *Schedule No.* 1, *was occasioned by an explosion of firedamp.*

The deceased was fireman, and acted as foreman brusher, that is, he superintended the brushing during night. It appears that he went to his work on the morning of the accident about 12.30 a.m., and was accompanied by three of the workmen. As explained by one of them he made the required examination, and afterwards left to shut off water which was occasionally drained off an old "waste." In about ten minutes after his leaving there was an explosion of firedamp, and on search being made the deceased was found at the entrance leading into the old waste, where unquestionably he had encountered firedamp whilst using an open light. The ordinary lamp, which apparently he had been using, was found near to him, but his safety lamp was got at the face of one of the working places about twenty yards farther off. It would appear that after examining the working places the deceased had laid aside his safety lamp, and at the time of the accident was imprudently using an open light.

It is difficult to account for such inconsistency, for certainly the place where the accident happened was one where firedamp was more likely to accumulate than in any of the working places.

Accident No. 23, *Schedule* No. 1, *was occasioned by the deceased rushing inconsiderately into a body of firedamp.*

There are two seams of coal at present being worked in this pit, the "Kiltongue" and "Splint." It appears that the working of the "Splint" had been abandoned for three or four days previous to the accident in consequence of an accumulation of gas. The direct cause being some defect in the aircourse, from fall of roof, and also an accumulation of water. The Splint coal is win by a cross-cut mine from the "Kiltongue" seam in which is constructed a midwall of brickwork. *It* was also being overhauled, and after the necessary repairs had been made it appears that the fireman had gone into the face, where the accumulation of gas was known to exist, to see what effect the alterations had produced, or rather to see if the firedamp was being dislodged. The oversman and others, all provided with safety lamps, remained a distance behind, awaiting his return. After a time the oversman, who was the fireman's brother, went into where it was understood that the fireman had gone, and apparently discovered that something was wrong; he called out for help, and in attempting to reach his brother was also affected by the vitiated air. Two workmen followed to render assistance, but on reaching a given point they also became helpless. Those remaining on discovering the state of things, four of their number struck down, gave the alarm for assistance, and after repeated attempts one of the four was reached, but before the other three could be got out they were dead. It is hard to comprehend what could induce the fireman to proceed so far into a *known* body of firedamp, where undoubtedly he was suffocated by the irrespirable gas. The others lost their lives from the same cause in attempting to rescue him.

Accident No. 35, *Schedule* No. 1, *was occasioned by the breakge of a "clack piece."*

The pit is in the act of being sunk and is 46 fathoms deep or thereby. It appears that on the day of the accident the deceased, who was the leading man on the shift, had occasion with others to overhaul or put in a new joint in the "clack door," about 11 fathoms above the bottom of the shaft. After making the change it was found that the pumps were not acting, the water was "hanging" in the pumps, and the engineman after driving the pump rods for ten minutes stopped them. After a short cessation the engine was again started when the "clack piece" suddenly burst, and part of it is supposed to have struck the deceased and driven him off the scaffold, at the "clack seat," upon which he was standing at the time, to the bottom of the pit. The clack piece was well tested, and had been in use for a number of years. There is no evidence to prove it, but I am of opinion that the pump rods and column of water had been allowed to descend at an excessive speed considering the circumstances, and coming violently in contact with the air and water lodged between the bucket and the "clack" produced the result described.

Accident No. 36, *Schedule* No. 1, *was occasioned by the engine being set in motion without a signal.*

This pit is in the act of being sunk and at present is 328 yards deep. The deceased was at the time of the accident engaged with two neighbouring workmen putting in a *set* of pump rods. They had the usual tackle and appliances for such work. The rods were lowered by a steam crane and wire rope, and the deceased and his neighbours were raised and lowered in a kettle attached to a wire rope worked by the winding engine. I understand that some time before the accident, the crane or crab rope, when hanging in the shaft, got entangled with the winding rope, at the end of which the kettle, with its occupants, was hanging. Their attention was directed to this, and it appears that several attempts were made by them to disentagle the ropes and free the kettle but without success. The signal wire also had in some way got jammed between the ropes, and during this unfortunate state of things the engineman put the engine in motion and raised the kettle. It had not proceeded far when the heavy "crab" rope, still entangled with the winding rope, forced the kettle against the pumps, or shaft fittings, and the deceased was in some way forced off the kettle and fell to the bottom where he was afterwards found dead. The pitheadman stated that a "slight signal" had been made some time before the engineman raised the kettle; this was unknown to the persons in the shaft, and *if* such a signal was made it must have been by accident. However, it is not stated that more than one slight signal was given, and the engineman did *not* hear it. Under the circumstances the signal to raise the kettle was *three*, the usual signal for raising men. The accident was in my opinion occasioned by the engineman disregarding this important regulation.

Accident No. 8, *Schedule* No. 2, *was occasioned by overwinding*.

The sufferers in this case were sinkers, and at the time of the accident were being raised in a kettle to the surface, but the engineman instead of stopping the kettle at the usual landing at the surface raised it to the pullies and crosshead, and the deceased came violently into collision with them, and were mortally injured.

The engineman was charged by the Procurators Fiscal of Stirling with culpable homicide, he was tried at the Autumn Circuit Court held in Stirling in September last and sentenced to three months imprisonment.

I have, &c.,
WILLIAM ALEXANDER,
Inspector of Mines.

To the Right Hon. R. A. Cross, M.P.,
Principal Secretary of State,
Whitehall, London.

SCHEDULE No. 1.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in MR. ALEXANDER'S DISTRICT, comprising the WESTERN MINING DISTRICT of SCOTLAND, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Jan. 19	1	Lucknow -	Stevenston -	Merry and Cunningham -	John Ross -	Roadsman -	29	Fall of roof whilst engaged securing it	–	1	–	–	–	1
Feb. 3	2	Braehead, No. 5 -	Baillieston -	Dunn Brothers - -	Wm. Clelland -	Collier -	22	Fall of roof at face - -	–	1	–	–	–	1
„ 5	3	Lanemark (Afton)	N. Cumnock -	Lanemark Coal Co. -	Wm. Mayberry -	Ditto -	30	Was run over by his "hutch" when coming down a heading road in front of it.	–	–	–	1	–	1
„ 8	4	Gartshore, No. 6 -	Kilsyth -	Wm. Baird and Co. -	Wm. Smith -	Sinker -	50	By running a hutch into the pit and falling with it to the bottom.	–	–	1	–	–	1
„ 10	5	Ellismuir, No. 2 -	Baillieston -	Provanhall Coal Co. -	Mich. McDonegal	Trimmer -	48	Was crushed between two loaded waggons whilst shifting one of them.	–	–	–	–	1	1
„ 26	6	Dalharco, No. 2 -	Patna -	Dalmellington Iron Co. -	David Stevenson -	Oversman -	32	Suffocated by gases whilst engaged putting out an underground fire.	–	–	–	3	–	3
					Wm. Bell -	Collier -	37							
					Francis Cunninghame.	Ditto -	23							
Mar. 3	7	Redburn, No. 2 -	Kilwinning -	Eglinton Iron Co. - -	Joseph M'Laren -	Brusher -	30	Fall of roof in a drawing road whilst repairing it.	–	1	–	–	–	1
„ 8	8	Annandale, No. 9	Kilmarnock -	Arch. Finnie and Son -	James Rorison -	Collier -	49	Fall of coal; was injured on the 5th of February.	–	1	–	–	–	1
„ 19	9	Hallhill, No. 1 -	Baillieston -	Ferrier and Strain -	Robert Gibson -	Ditto -	18	Fall of roof at face - -	–	1	–	–	–	1
Apr. 15	10	Gartshore, No. 5 -	Kilsyth -	Wm. Baird and Co. -	Wm. Cruthers -	Roadsman -	35	By falling off a scaffold at pithead 15 ft. high.	–	–	–	–	1	1
„ 30	11	Ditto, ditto -	Ditto -	Ditto - -	Robt. Barrowman -	Miner -	35	Explosion of firedamp - -	1	–	–	–	–	1
„ 28	12	Drumpeller, No. 4	Coatbridge -	Henderson and Dimmack	John Weir -	Collier -	20	Ditto. Died 10th May	1	–	–	–	–	1
					And. Blakely -	Ditto -	24	Ditto. Died 2nd May	1	–	–	–	–	1

List of the Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
May 4	13	Holmes, No. 4	Galston	John Horne and Sons	Jas. McKail	Engineman	21	Got entangled with the pumping machinery.	–	–	–	–	1	1
„ 24	14	Enterkine, No. 7	Ayr	George Taylor and Co.	Wm. Livingstone	Assistant pit-head.	17	Was run over by full waggons at the colliery siding or "bye."	–	–	–	–	1	1
„ 25	15	Barrwood, No. 1	Kilsyth	Wm. Baird and Co.	Peter Gairdner	Collier	—	Explosion of firedamp. Injured on the 17th; died on the 25th.	1	–	–	–	–	1
„ 31	16	Swineridgemuir	Beith	Merry and Cunningham	Wm. Sheddon	Ditto	24	Fall of coal in working place	–	1	–	–	–	1
„ 31	17	Lucknow	Stevenston	Ditto	Mich. Deverick	Roadsman	41	Caused by the cage being lifted without a proper signal.	–	–	1	–	–	1
June 3	18	Ellismuir, No. 3	Baillieston	Provanhall Coal Co.	James Liddell	Joiner	50	In consequence of the breakage of the fly-wheel of the pumping engine, the deceased was struck by a part of it whilst engaged on the pithead frame.	–	–	–	–	1	1
„ 7	19	Gadgirth, No. 1	Ayr	George Taylor and Co.	Wm. Kerr	Collier	46	Fall of coal	–	1	–	–	–	1
„ 11	20	Ballochmyle, No. 4	Auchinleck	Wm. Walker's Trustees	Mungo Nimmo	Pitheadman	54	Was struck with the descending cage whilst looking down the shaft.	–	–	1	–	–	1
„ 28	21	Garturk, No. 1	Coatbridge	Rochsolloch Iron Co.	John Maule	Fireman	55	Explosion of firedamp	1	–	–	–	–	1
July 4	22	Phœnix	Ditto	John Spencer	James Lindsay	Brusher	66	Fall of roof while engaged taking it down. Injured 24th June; died 4th July.	–	1	–	–	–	1
„ 17	23	Drumpeller, No. 4	Ditto	Henderson and Dimmack	Chas. Richardson John Richardson Arthur Moffatt	Oversman Fireman Roadsman	30 24 27	Suffocation by gases (firedamp)	–	–	–	3	–	3
„ 31	24	Galston	Galston	John Horne and Sons	John Biggins	Collier	58	Fall of coal	–	1	–	–	–	1
Aug. 6	25	Gartgill, No. 7	Coatbridge	Wm. Baird and Co.	Robert Douglas	Trimmer	17	By falling among waggons being "shunted" by a locomotive.	–	–	–	–	1	1
Sept. 9	26	Greenend	Ditto	W. S. Dixon (Limited)	Pat. Gilmartin	Miner	28	Fall of roof	–	1	–	–	–	1
„ 16	27	Kirkwood, No. 1	Ditto	John Hendrie	Owen Fallen	Collier	32	Fall of coal. Was injured 20th August	–	1	–	–	–	1

List of the Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Sept. 21	28	Glengyron, No. 2	Cumnock	Eglinton Iron Co.	Adam Morris	Brusher	49	Fall of roof	–	1	–	–	–	1
„ 27	29	Lightshaw, No. 2	Muirkirk	Ditto	Wm. Carle	Collier	47	Ditto. Injured on the 23rd; died on the 26th.	–	1	–	–	–	1
Oct. 18	30	Portland, No. 4	Hurlford	Allan, Gilmour, and Co.	Wm. Wason	Ditto	45	Fall of coal	–	1	–	–	–	1
Nov. 2	31	Ellismuir, No. 2	Baillieston	Provanhall Coal Co.	Thos. Peacock	Roadsman	50	Fall of roof	–	1	–	–	–	1
„ 8	32	Bonnyton	Kilmarnock	John Gilmour and Co.	Wm. Donnington	Collier	30	Ditto	–	1	–	–	–	1
„ 10	33	Drumlemble	Campbelton	Drumlemble Coal Co.	Chas. Armour	Ditto	30	Fall of coal	–	1	–	–	–	1
„ 12	34	Heatheryknowe, No. 2.	Baillieston	Heatheryknowe Coal Co.	John Gibson	Fireman,&c.	34	Fell from the cage whilst being raised from the splint coal.	–	–	1	–	–	1
„ 12	35	Drumchapel,No. 2	Duntocher	Merry and Cunningham	Alex. Arnot	Sinker	20	Was driven off a scaffold in the shaft by the breakage of a "clack piece" whilst engaged working at it.	–	–	1	–	–	1
„ 24	36	Kames	Muirkirk	Eglinton Iron Co.	Mich. Cavannah	Ditto	35	He was lifted without a signal, and getting entangled with the "crab rope" was drawn from the kettle and fell to the bottom.	–	–	1	–	–	1
Dec. 1	37	Aikenhead	Glasgow	Geo. Crookston	Robert Steel	Collier	30	Fall of coal whilst engaged "holing" it.	–	1	–	–	–	1
„ 4	38	Glenduffil	Baillieston	Robert Brand	Samuel Taylor	Ditto	28	Fell from a midworking whilst engaged with the bottomer putting a hutch upon the cage.	–	–	1	–	–	1
„ 9	39	Govan, No. 5	Glasgow	W. S. Dixon	Robert Maxwell	Ditto	55	Fall of roof	–	1	–	–	–	1
—	40	Drumpeller	Coatbridge	Henderson and Dimmack	Hugh Smith	Ditto	25	Ditto. Was injured 13th January 1875, and died 8th January 1876.	–	1	–	–	–	1
									5	20	7	7	6	45

SCHEDULE No. 2.

List of the Fatal Accidents in Ironstone Mines, and Loss of Life arising therefrom, in Mr. Alexander's District, comprising the Western Mining District of Scotland, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Jan. 6	1	Knightswood -	Maryhill -	Summerlee Iron Co. -	James Wilson -	Miner -	16	Fell from a midworking - - -	–	–	1	–	–	1
„ 15	2	Cronberry, No. 2	Lugar - -	Eglinton Iron Co. -	James Blair -	Roadsman -	42	Fall of roof - - - -	–	1	–	–	–	1
Feb. 17	3	Wellwood, No. 11	Muirkirk -	Ditto - -	Robert Geddes -	Bottomer -	17	Ditto - - - - -	–	1	–	–	–	1
May 10	4	Blair, No. 8 -	Dalry -	Ditto - -	John Muskalby -	Sinker -	55	Was injured by a plank falling upon him in a sinking shaft.	–	–	1	–	–	1
„ 14	5	Pitcon, No. 6 -	Ditto -	Ditto - -	Wm. Phillips -	Miner -	60	Fall of roof at working face - -	–	1	–	–	–	1
„ 20	6	Corby Craigs, No. 5	Dalmellington	Dalmellington Iron Co. -	Wm. McGhee -	Drawer -	24	Was run over by his hutch upon a "rise" road or incline.	–	–	–	1	–	1
July 30	7	Gartshore, No. 10	Kilsyth -	Wm. Baird and Co. -	James Harrison -	Sinker -	45	By the fall of part of the midwall of the shaft driven out by the kettle in its ascent.	–	–	1	–	–	1
Aug. 31	8	Haugh - -	Ditto -	Ditto - -	John McClay -	Ditto -	35	By overwinding, McClay fell down the shaft, and Kyle was crushed against the pithead framing, between the kettle and the "cross-trees."	–	–	2	–	–	2
					Chas. Kyle -	Ditto -	30							
Nov. 27	9	Blackstone, No. 1	Lugar - -	Eglinton Iron Co. - -	James Marshall -	Miner -	19	Fall of roof at working face -	–	1	–	–	–	1
Dec. 10	10	Common, No. 11 -	Ditto -	Ditto - -	John Earl -	Ditto -	28	Ditto - - - -	–	1	–	–	–	1
„ 30	11	Ditto, No. 2 -	Ditto -	Ditto - -	Thos. McInultey -	Ditto -	40	Ditto - - - -	–	1	–	–	–	1
„ 31	12	Corby Craigs, No. 5	Dalmellington	Dalmellington Iron Co. -	James Lowry -	Roadsman -	25	Was struck by a stone whilst blasting; he failed to go beyond the range of the blast.	–	–	–	1	–	1
									–	6	5	2	–	13

SCHEDULE No. 3.

List of the Fatal Accidents in Metalliferous Mines, and Loss of Life arising therefrom, in Mr. Alexander's District, comprising the Western Mining District of Scotland, during the Year 1875.

June 29	1	Orchard, Giffnock	Pollokshaws -	Baird and Stevenson -	Jonathan Polland -	Quarrier -	38	Fall of roof - - - -	–	1	–	–	–	1

APPENDIX 1.

Showing the Dates on which the Non-fatal Explosions of Firedamp and the Non-fatal falls of Coal and Roof occurred during 1875.

Day of month.	January.		February.		March.		April.		May.		June.		July.		August.		Sept.		October.		Nov.		Dec.	
	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.	Explosions.	Falls of roof.
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	1
2	–	–	–	–	1	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
4	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	1	–	1	–	–	–	–
5	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–
6	–	1	–	1	–	–	–	1	–	3	–	–	–	–	–	–	–	–	–	–	1	–	1	–
7	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–
8	–	–	–	1	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
9	–	–	–	–	2	–	–	2	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–
10	–	–	–	–	1	2	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–
11	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
12	1	1	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
13	–	–	1	1	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
14	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–
15	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	2	1	–	–	–	–
16	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–
17	–	–	1	–	–	1	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
18	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	1	1	1	–	–	1	–
19	–	1	–	–	–	–	–	1	1	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–
20	1	–	–	1	–	–	–	–	–	–	–	–	–	–	1	1	–	1	–	2	–	–	–	–
21	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	1	–	–
22	–	–	–	–	–	–	–	–	1	1	–	–	–	1	–	–	1	–	–	1	–	–	–	–
23	–	1	–	–	–	1	–	–	–	–	–	2	1	–	–	–	–	–	–	1	–	2	–	–
24	–	–	–	–	1	–	–	1	–	–	1	–	–	–	1	2	–	–	–	–	–	2	–	–
25	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–
26	–	1	–	–	–	1	–	1	–	1	–	1	–	–	–	–	–	–	–	1	–	–	–	–
27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3	1	–	–	–	–	1
28	1	1	–	–	–	–	2	–	–	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–
29	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
30	–	1	–	–	–	–	–	–	–	–	–	–	–	2	1	1	–	–	–	–	–	3	–	–
31	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
	3	9	2	5	8	7	5	12	3	8	1	12	4	4	3	9	4	9	4	10	1	12	3	8

Explosions	41
Falls of roof	105
In shafts	10
Miscellaneous	57
Above ground	11
Total	224

LIST OF MINES classed under the COAL MINES REGULATION ACT, in MR. WILLIAM ALEXANDER'S DISTRICT, 1875.

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
	LANARKSHIRE COLLIERIES.			
	GLASGOW DISTRICT.			
1	George Crookstone, Crosshill, Glasgow.	Aitkenhead	Glasgow.	
2	Robert Addie and Sons, Langloan Ironworks, Coatbridge.	Balgray	Maryhill.	
3	James Dunlop and Co., Clyde Ironworks, Tollcross.	Balornock	Bishop Briggs.	
4	William S. Dixon, Govan Ironworks, Glasgow.	Bishop Briggs	Ditto.	
5	Summerlee Iron Co., Coatbridge	Blackhill	Maryhill.	
6	James Dunlop and Co., Clyde Ironworks, Tollcross.	Bogleshole	Tollcross.	
7	Carron Iron Co., Falkirk	Cadder	Bishop Briggs.	
8	Flemington Coal Co., Cambuslang.	Cambuslang	Cambuslang.	
9	James Dunlop and Co., Clyde Ironworks, Tollcross.	Carmyle	Tollcross.	
10	T. G. Buchanan, Cambuslang	Eastfield	Cambuslang.	
11	James Fairrie, Rutherglen	Farme	Rutherglen.	
12	Flemington Coal Co., Cambuslang.	Flemington	Cambuslang.	
13	Foxley Coal Co., Tollcross	Foxley	Tollcross.	
14	Summerlee Iron Co., Coatbridge	Gilshochill	Maryhill.	
15	William S. Dixon, Govan Ironworks, Glasgow.	Govan	Glasgow.	
16	Monkland Iron Co., Airdrie	Jordanhill	Partick.	
17	Summerlee Iron Co., Coatbridge	Kenmure	Bishop Briggs.	
18	James Dunlop and Co., Tollcross	Newton	Cambuslang.	
19	Doig and McNeil, Springburn, Glasgow.	Possil	Springburn.	
20	G. Simpson, Cambuslang	Spittal	Cambuslang.	
21	J. R. Reid, Rutherglen	Stonelaw	Rutherglen.	
22	John Robertson and Son, Tollcross.	Tollcross	Tollcross.	
23	Dunn Brothers, Cambuslang	Wellshot	Cambuslang.	
24	R. Forrester, Cambuslang	Westburn	Ditto.	
25	Flemington Coal Co., Cambuslang.	Westburn	Ditto.	
	BAILLIESTON AND SHETTLESTON DISTRICT.			
1	Wm. Young and Co., Baillieston	Baillieston	Baillieston.	
2	Ditto ditto	Barrachnie	Ditto.	
3	John Reid, Baillieston	Bogside	Ditto.	
4	Dunn Brothers, Baillieston	Braehead	Ditto.	
5	Ditto ditto	Bredisholme	Ditto.	
6	Ditto ditto	Burnt Broom	Mount Vernon.	
7	Provanhall Coal Co., Baillieston	Calderbank	Baillieston.	
8	A. Yeats and Co., Shettleston	Cardowan	Shettleston.	
9	Drumpark Coal Co., Baillieston	Drumpark	Baillieston.	
10	Robert Robson, Shettleston	Dungeonhill	Shettleston.	
11	Provanhall Coal Co., Baillieston	Ellismuir	Baillieston.	
12	A. Yeats and Co., Shettleston	Gartcraig	Shettleston.	
13	Provanhall Coal Co., Baillieston	Garthamloch	Baillieston.	
14	A. Yeats and Co., Shettleston	Gartsheugh	Shettleston.	
15	Mr. Brand, Baillieston	Glenduffhill	Baillieston.	
16	McNair, Stokes, and Dixon, Shettleston.	Greenfield	Shettleston.	
17	Heatheryknowe Coal Co., Baillieston.	Heatheryknowe	Baillieston.	
18	James Dunlop and Co., Tollcross	Kenmuir	Tollcross.	
19	John Horne, Tollcross	Kenmuirhill	Ditto.	
20	Alexander Rankine, Shettleston	Lightburn	Shettleston.	
21	Wm. Baird and Co., Coatbridge	Mainhill	Baillieston.	
22	John Young, Baillieston	Netherhouse	Ditto.	
23	W. Wallace and Co., Bishop Briggs.	Over Possil	Bishop Briggs.	
24	Provanhall Coal Co., Baillieston	Provanhall	Baillieston.	
25	Ferrier and Strain, Baillieston	Wester Hawhill	Ditto.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
	LANARKSHIRE COLLIERIES—*continued.*			
	AIRDRIE AND COATBRIDGE DISTRICT.			
1	Wm. Baird and Co., Coatbridge	Cairnhill	Airdrie.	
2	W. S. Dixon, Coatbridge	Calder Ironworks	Coatbridge.	
3	Cliftonhill Coal Co., Coatbridge	Cliftonhill	Ditto.	
4	Thomas Jackson, Coatbridge	Coats	Ditto.	
5	Drumpeller Coal Co., Coatbridge	Drumpeller	Ditto.	
6	Summerlee Iron Co., Coatbridge	Ditto	Ditto.	
7	Drumpeller Coal Co., Coatbridge	Dundyvan	Ditto.	
8	Wm. Baird and Co., Gartsherrie, Coatbridge.	Espieside	Ditto.	
9	Ditto ditto	Faskine	Airdrie.	
10	Ditto ditto	Gartgill	Coatbridge.	
11	Ditto ditto	Gartsherrie	Ditto.	
12	Ditto ditto	Gunnie	Ditto.	
13	John Hendrie, Coatbridge	Kirkwood	Ditto.	
14	Summerlee Iron Co., Coatbridge	Ditto	Ditto.	
15	Monkland Iron Co., Airdrie	Monkland	Airdrie.	
16	Wm. Baird and Co., Coatbridge	Palacecraig	Ditto.	
17	John Spencer, Coatbridge	Phœnix	Coatbridge.	
18	Wm. Baird and Co., Coatbridge	Raw	Ditto.	
19	Robert Addie & Sons, Coatbridge	Rosehall	Ditto.	
20	Pettigrew and Co., Coatbridge	Souterhouse	Ditto.	
21	Summerlee Iron Co., Coatbridge	Summerlee	Ditto.	
	AYRSHIRE COLLIERIES.			
	AYR, DALMELLINGTON, AND GIRVAN DISTRICT.			
1	J. T. Gordon, Ayr	Annbank	Ayr.	
2	M'Harrie and Couper, Maybole	Barganie	Maybole.	
3	Dalmellington Iron Co., Dalmellington.	Beoch	Dalmellington.	
4	Ditto ditto	Carbieston	Coylton.	
5	Ditto ditto	Chalmerston	Dalmellington.	
6	Shedden & Co., Coylton	Corsehill	Coylton.	
7	Dalmellington Iron Co., Dalmellington.	Craigmark	Dalmellington.	
8	Ditto ditto	Dalharco	Ditto.	
9	Hon. T. F. Kennedy, Maybole	Dalquharran	Maybole.	
10	Jas. Couper, Maybole	Dalzielsie	Ditto.	
11	J. Bryden and Co., Coylton	Duchray	Coylton.	
12	Shedden and Co., Coylton	Garriochill	Ditto.	
13	Merry and Cunningham	Kerse	Ditto.	
14	Ditto	Knockshinnoch	Ditto.	
15	R. and J. Dunsmuir, Coylton	Schaw	Ditto.	
16	Dalmellington Iron Co., Dalmellington.	Smithston	Patna.	
17	J. T. Gordon, Ayr	Sundrum	Ayr.	
	IRVINE, KILWINNING, AND DALRY DISTRICT.			
1	Merry & Cunningham, Dreghorn	Alnwick Lodge	Dreghorn.	
2	Ditto, Irvine	Armsheugh	Irvine.	
3	Kenneth & Whitefield, Saltcoats	Auchinharvie	Saltcoats.	
4	Mackay and Co., Beith	Barr	Beith.	
5	Eglinton Iron Co., Kilwinning	Bartonholm	Kilwinning.	
6	Ditto Dalry	Blair Ironworks	Dalry.	
7	Finnie and Finlay, Dreghorn	Bourtreehill	Dreghorn.	
8	J. Paterson and Co., Irvine	Burgh	Irvine.	
9	A. Finnie and Sons, Kilmarnock	Cauldhame	Kilmarnock.	
10	T. Oliphant, Dalry	Coalheugh Glen	Dalry.	
11	Merry and Cunningham, Dalry	Courthill	Ditto.	
12	R. Dunsmuir, Dalry	Crossroads	Ditto.	
13	Barr and M'Jannet, Ardrossan	Doura	Irvine.	
14	A. Kenneth & Sons, Kilwinning	Eglinton	Kilwinning.	
15	Eglinton Iron Co., Kilwinning	Eglinton Ironworks	Ditto.	
16	A. Finnie and Sons, Kilmarnock	Fergushill	Ditto.	
17	Merry & Cunningham, Kilbirnie	Glengarnock Ironworks	Kilbirnie.	
18	Mr. Napier, Kilwinning	Goldcraig	Kilwinning.	
19	Fulton and Armour, Kilwinning	Monkridden	Ditto.	
20	Eglinton Iron Co., Kilwinning	Mount Curr	Ditto.	
21	W. M'Donald & Co., Perceton	Perceton	Irvine.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
		AYRSHIRE COLLIERIES—*continued.*		
		Irvine, Kilwinning, and Dalry District—*continued.*		
22	J. and M. Craig, Kilmarnock	Perceton	Irvine.	
23	Eglinton Iron Co., Kilwinning	Redburn	Kilwinning.	
24	Fulton and Armour, Kilwinning	Redstone	Ditto.	
25	Gilmour, Wood, and Anderson, Irvine.	Shewalton	Irvine.	
26	A. Finnie and Sons, Kilmarnock	Springhill	Kilmarnock.	
27	A. Kenneth & Sons, Kilwinning	Springside	Irvine.	
28	A. Smith and Co., Stevenstone	Stevenstone	Stevenstone.	
29	Merry and Cunningham	Swindridgemuir	Beith.	
30	Stewart and Co., Dalry	Templand	Dalry.	
		KILMARNOCK AND GALSTON DISTRICT.		
1	Eaglesham and Dunlop, Kilmarnock.	Ashyard	Galston.	
2	Eglinton Iron Co., Kilmarnock	Bankhead	Ditto.	
3	John Galloway, Kilmarnock	Barleith	Hurlford.	
4	Jas. Dickie and Co., Kilmarnock	Bogside	Kilmarnock.	
5	John Gilmour and Co., Kilmarnock.	Bonnyton	Ditto.	
6	Boyd, Gilmour, and Co., Galston	Burn Bank and Ladyton	Galston.	
7	A. Finnie and Sons, Kilmarnock	Busbie	Kilmarnock.	
8	Ditto ditto	Carnilbank	Ditto.	
9	W. S. Cunningham, Kilmarnock	Caprington	Ditto.	
10	John Galloway, Kilmarnock	Dollar	Hurlford.	
11	Merry & Cunningham, Dreghorn	Drummuir	Dreghorn.	
12	Eglinton Iron Co., Kilmarnock	Dykehead	Hurlford.	
13	A. Finnie and Sons, Kilmarnock	East Thornton	Kilmarnock.	
14	John Horne, Galston	Galston	Galston.	
15	Gauchalland Coal Co., Galston	Gauchalland	Ditto.	
16	Boyd, Gilmour, and Co., Galston	Goatfoot	Ditto.	
17	R. Yeats and Co., Kilmarnock	Grange	Kilmarnock.	
18	Eglinton Iron Co., Kilmarnock	Grougar	Ditto.	
19	J. Oslar and Co., Kilmarnock	Hayside	Ditto.	
20	J. and M. Craig, Kilmarnock	Hillhead	Ditto.	
21	John Horne, Galston	Holmes	Galston.	
22	John Howie, Kilmarnock	Hurlford	Hurlford.	
23	Allan, Gilmour, and Co., Kilmarnock.	Ditto	Ditto.	
24	A. Finnie and Sons, Kilmarnock	Kilmarnock	Kilmarnock.	
25	Eglinton Iron Co., Kilmarnock	Loudon	Galston.	
26	Maxwood Coal Co., Galston	Maxwood	Ditto.	
27	Allan, Gilmour, and Co., Kilmarnock.	Mayfield	Hurlford.	
28	Merry & Cunningham, Dreghorn	Overton	Dreghorn.	
29	Ditto ditto	Paddocklaw	Ditto.	
30	John McKnight, Kilmarnock	Plan	Kilmarnock.	
31	Allan, Gilmour, and Co., Kilmarnock.	Portland	Hurlford.	
32	Eglinton Iron Co., Kilmarnock	Portland Iron Works	Ditto.	
33	Merry & Cunningham, Dreghorn	Warrickhill	Dreghorn.	
34	Ditto Kilmarnock	Woodhill	Kilmarnock.	
		CUMNOCK AND MUIRKIRK DISTRICT.		
1	Barr and Co., Muirkirk	Ashieburn	Muirkirk.	
2	Ditto ditto	Auldhouseburn	Ditto.	
3	William Walker, Auchinleck	Ballochmyle	Auchinleck.	
4	Bank Coal Co., N. Cumnock	Bank	N. Cumnock.	
5	Jas. McNicol, Cumnock	Coalburn	Cumnock.	
6	Eglinton Iron Co., Cumnock	Common	Ditto.	
7	Ditto ditto	Cronberry	Ditto.	
8	Barr and Co., Muirkirk	Crossflat	Muirkirk.	
9	Eglinton Iron Co., Cumnock	Cumnock	Cumnock.	
10	Jas. Eaglesham, Cumnock	Garallan	Ditto.	
11	Gilmour, Wood, and Anderson, Auchinleck.	Gilmilnscroft	Auchinleck.	
12	Barr and Co., Muirkirk	Glenbuck	Muirkirk.	
13	Eglinton Iron Co., Muirkirk	Ditto	Ditto.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
		AYRSHIRE COLLIERIES—*continued.*		
		Cumnock and Muirkirk District—*continued.*		
14	Eglinton Iron Co., Muirkirk	Glenlogan	Cumnock.	
15	Lanemark Coal Co., N. Cumnock	Lanemark	N. Cumnock.	
16	Eglinton Iron Co., Muirkirk	Lightshaw	Muirkirk.	
17	Ditto Cumnock	Lugar Ironworks	Cumnock.	
18	Ditto Muirkirk	Maidenbank	Muirkirk.	
19	Archd. Gray & Co., N. Cumnock	Pathhead	N. Cumnock.	
20	Lanemark Coal Co., N. Cumnock	S. Boig	Ditto.	
21	Eglinton Iron Co., Muirkirk	Stottencleugh	Muirkirk.	
22	Lanemark Coal Co., N. Cumnock	Strade	New Cumnock.	
23	Eglinton Iron Co., Muirkirk	Wellwood	Muirkirk.	
		WESTERN DIVISION OF STIRLINGSHIRE COLLIERIES.		
1	James Johnstone, Alva	Alva	Alva.	
2	M. M'Gregor, Kilsyth	Auchinrivock	Kilsyth.	
3	John Kirk, Campsie	Balgrochan	Lennoxtown.	
4	James Allan, Campsie	Balglass	Ditto.	
5	Wm. Wilson, Banknock, Denny	Banknock	Banknock.	
6	J. Johnstone, Bannockburn	Bannockburn	Bannockburn.	
7	Carron Co., Falkirk	Bantone	Kilsyth.	
8	W. Baird and Co., Kilsyth	Barrwood	Ditto.	
9	Hurlet and Campsie Alum Co., Campsie.	Campsie	Lennoxtown.	
10	John Barr, Kilsyth	Coney Park	Kilsyth.	
11	Cameron and Hutton, Bannockburn.	Cowie	Bannockburn.	
12	Robert Addie and Sons, Denny	Dennymill	Denny.	
13	Moyes, Murray, and Co., Stirling	Dunmore	Stirling.	
14	E. Plean Coal Co., Bannockburn	East Plean	Bannockburn.	
15	John Lynch, Lennoxtown	Glorrat	Lennoxtown.	
16	William Rattray, Bannockburn	Greenyards	Bannockburn.	
17	Brown and Rennie, Kilsyth	Highland Park	Kilsyth.	
18	Wm. Baird and Co., Denny and Coatbridge.	Inglestone	Denny.	
19	Ditto, Kilsyth	Kilsyth	Kilsyth.	
20	James Wallace & Co., Kilsyth	Neilston	Ditto.	
21	J. Bow and Co., Kilsyth	Queenzie	Ditto.	
22	Wm. Baird and Co., Kilsyth	Riskend	Ditto.	
23	Ditto ditto	Townhead	Ditto.	
24	Ditto ditto	Twechar	Ditto.	
25	R. Brown, Bannockburn	West Plean	Bannockburn.	
		DUMBARTONSHIRE COLLIERIES.		
1	James Young & Sons, Duntocher	Baljaffray	Duntocher.	
2	Merry & Cunningham, ditto	Blairdardie	Ditto.	
3	Barr and Co, Kirkintilloch	Braes O'Yetts	Kirkintilloch.	
4	Merry and Cunningham, Duntocher.	Drumchapel	Duntocher.	
5	Ditto ditto	Garscadden	Ditto.	
6	M'Nair, Stokes, and Dixon, Shettleston.	Garscube	Maryhill.	
7	Wm. Baird and Co., Coatbridge	Gartshore	Kilsyth.	
8	Summerlee Iron Co., Ditto	Knightswood	Maryhill.	
9	Jas. Gairdner and Sons, Kirkintilloch.	Meiklehill	Kirkintilloch.	
10	Miller, Cumming, and Martin, Cumbernauld.	Netherwood	Cumbernauld.	
11	Barr & Co., Kirkintilloch	Solesgirth	Kirkintilloch.	
		RENFREWSHIRE COLLIERIES.		
1	Allan Craig and Sons, Paisley	Blackstone	Paisley.	
2	W. Black, Paisley	Ditto	Ditto.	
3	W. S. Dixon, Johnstone	Barbush	Johnstone.	
4	Merry & Cunningham, Johnstone	Clippins	Ditto.	
5	J. Wilson, Pollockshaws	Corkerhill	Pollockshaws.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
		RENFREWSHIRE COLLIERIES—*continued.*		
6	J. Liddell and Co., Johnstone	Fulton	Johnstone.	
7	W. S. Dixon and Co., Govan Ironworks, Glasgow.	Ibrox	Govan.	
8	Merry & Cunningham, Johnstone	Inkerman	Johnstone.	
9	Jas. Anderson, Johnstone	Linnwood	Ditto.	
10	Nitshill Coal Co., Hurlet	Nitshill	Hurlet.	
11	Lud. Houston, Johnstone	Quarrelton	Johnstone.	
12	J. and T. Shaw, Paisley	Southbar	Paisley.	
13	J. Wilson, Pollockshaws	Titwood	Pollockshaws.	
14	J. Wilson and Sons, Hurlet	West Hurlet and Townhead.	Hurlet.	
		ARGYLESHIRE COLLIERY.		
1	J. Smellie and Son, Campbelton	Drumlemble	Campbelton.	
		DUMFRIESSHIRE COLLIERIES.		
1	Misses Whygham, Sanquhar	Cairnburn	Sanquhar.	
2	Duke of Buccleuch, Canonbie	Canonbie	Canonbie.	
3	Misses Whygham, Sanquhar	Drumbuie	Sanquhar.	
4	Ditto ditto	Gateside	Ditto.	
		LANARKSHIRE IRONSTONE MINES.		
1	James Dunlop and Co., Clyde Ironworks, Tollcross.	Balornock and Robroystone.	Bishop Briggs.	
2	Summerlee Iron Co., Summerlee Ironworks, Coatbridge.	Blackhill	Ditto.	
3	Carron Iron Co., Carron Ironworks, Falkirk.	Cadder	Ditto.	
4	James Dunlop and Co., Clyde Ironworks, Tollcross.	Gartnavel	Maryhill.	
5	Robert Addie and Sons, Langloan Ironworks, Coatbridge.	Gartnavel and Balgray	Ditto.	
6	Summerlee Iron Co., Summerlee Ironworks, Coatbridge.	Gilshochill	Ditto.	
7	W. S. Dixon, Govan Ironworks, Glasgow.	Huntershill	Bishop Briggs.	
8	Monkland Iron Co., Airdrie	Jordanhill and Skaterigg	Maryhill.	
9	Summerlee Iron Co., Summerlee Ironworks, Coatbridge.	Kenmure	Bishop Briggs.	
10	W. S. Dixon, Govan Ironworks, Glasgow.	Mosesfield	Ditto.	
		AYRSHIRE IRONSTONE MINES.		
		CUMNOCK AND LUGAR DISTRICT.		
1	Eglinton Iron Co., Lugar, Cumnock.	Barrhill	Cumnock.	
2	Ditto ditto	Blackstone	Ditto.	
3	Ditto ditto	Carbello	Ditto.	
4	Ditto ditto	Common	Ditto.	
5	Ditto ditto	Commondyke	Ditto.	
6	Ditto ditto	Craigstone	Ditto.	
7	Ditto ditto	Cronberry	Ditto.	
8	Ditto ditto	Glengyron	Ditto.	
9	Ditto ditto	Glenlogan	Ditto.	
10	Ditto ditto	Mosshouse	Ditto.	
11	Ditto ditto	Shankstone	Ditto.	
12	Ditto ditto	Stepends	Ditto.	
13	Ditto ditto	Templand	Ditto.	
14	Ditto ditto	Wellwood	Muirkirk.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.

AYRSHIRE IRONSTONE MINES—*continued.*

DALRY AND KILBIRNIE DISTRICT.

1	Merry and Cunningham, Glengarnock, Dalry.	Barkip	Beith.	
2	Ditto ditto	Birkentuck	Ditto.	
3	Eglinton Iron Co., Dalry	Blair	Dalry.	
4	Merry and Cunningham, Glengarnock, Dalry.	Bradley	Ditto.	
5	Ditto ditto	Busbiehead	Kilmarnock.	
6	W. S. Dixon, Govan Ironworks, Glasgow.	Caldwell	Beith.	
7	Eglinton Iron Co., Dalry	Carsehead	Dalry.	
8	Merry and Cunningham, Glengarnock, Dalry.	Coalheugh Glen	Ditto.	
9	Ditto ditto	Fergushill	Kilmarnock.	
10	Ditto ditto	Flashwood	Dalry.	
11	Ditto ditto	Glengarnock	Ditto.	
12	Ditto ditto	Greenbank	Ditto.	
13	Ditto ditto	Hardcroft	Ditto.	
14	Ditto ditto	Highfield	Beith.	
15	Eglinton Iron Co., Dalry	Kersland	Dalry.	
16	Merry and Cunningham, Glengarnock, Dalry.	Kilbirnie	Ditto.	
17	Ditto ditto	Langlands	Ditto.	
18	Ditto ditto	Merksworth	Ditto.	
19	Ditto ditto	Muirhouse	Beith.	
20	Eglinton Iron Co., Dalry	Pitcon	Dalry.	
21	Merry and Cunningham, Glengarnock, Dalry.	Plan	Kilmarnock.	
22	Ditto ditto	Riddance	Dalry.	
23	Ditto ditto	Ryesholm	Ditto.	
24	Ditto ditto	Swineridgemuir	Beith.	
25	Eglinton Iron Co., Dalry	Todshill	Dalry.	

AYR AND DALMELLINGTON DISTRICT.

1	Dalmellington Iron Co., Dalmellington.	Bowhill	Dalmellington.	
2	Ditto ditto	Burnfoot	Ditto.	
3	Ditto ditto	Corby Craigs	Ditto.	
4	Ditto ditto	Drumgrange	Ditto.	
5	Merry and Cunningham, Glengarnock.	Kerse	Coylton.	
6	Dalmellington Iron Co., Dalmellington.	Ponessan	Dalmellington.	
7	Ditto ditto	Raithhill	Coylton.	
8	Merry and Cunningham, Glengarnock.	Rankinston	Ditto.	
9	Dalmellington Iron Co., Dalmellington.	Sundrum	Ditto.	

RENFREWSHIRE IRONSTONE MINES.

1	Merry and Cunningham, Paisley	Abercorn	Paisley.	
2	W. Black and Sons, Paisley	Blackstone	Ditto.	
3	W. S. Dixon, Govan Ironworks, Glasgow.	Burnbrae	Linnwood.	
4	Jas. Dunlop and Co., Clyde Ironworks, Tollcross.	Cardonald	Govan.	
5	Merry and Cunningham, Paisley	Clippins	Paisley.	
6	Ditto ditto	Douglas	Ditto.	
7	Colin Dunlop and Co., Quarter Ironworks, Hamilton.	Drumoin	Govan.	
8	Ditto ditto	Hillington	Ditto.	
9	W. S. Dixon, Govan Ironworks, Glasgow.	Ibrox	Ditto.	
10	Merry and Cunningham, Paisley	Ibroxhill	Ditto.	
11	James Dunlop and Co., Clyde Ironworks, Tollcross.	Linnwood	Johnstone.	
12	Merry and Cunningham, Paisley	Walkinshaw	Paisley.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
	DUMBARTONSHIRE IRONSTONE MINES.			
1	Merry and Cunningham, Duntocher.	Blairdardie	Duntocher.	
2	Ditto ditto	Drumchapel	Ditto.	
3	Ditto ditto	Garscadden	Ditto.	
4	Summerlee Iron Co., Coatbridge	Garscube	Ditto.	
5	Merry and Cunningham, Duntocher.	Gartconnel	Ditto.	
6	Wm. Baird and Co., Gartsherrie, Coatbridge.	Gartshore	Kilsyth.	
7	Merry and Cunningham, Duntocher.	Hutchison	Duntocher.	
8	Summerlee Iron Co., Coatbridge	Knightswood	Maryhill.	
	STIRLINGSHIRE IRONSTONE MINES.			
1	Wm. Baird and Co., Gartsherrie, Coatbridge.	Balgrochan	Kilsyth.	
2	Carron Iron Co., Carron Ironworks, Falkirk.	Bantone	Denny.	
3	Wm. Baird and Co., Gartsherrie, Coatbridge.	Barrwood	Kilsyth.	
4	Ditto ditto	Broomhill	Denny.	
5	Robert Addie and Sons, Langloan, Coatbridge.	Dennymill	Ditto.	
6	Wm. Baird and Co., Gartsherrie, Coatbridge.	Drumellier	Ditto.	
7	Ditto ditto	Dumbreck	Kilsyth.	
8	Ditto ditto	Haugh	Ditto.	
9	Ditto ditto	Inglestone	Denny.	
10	Ditto ditto	Quarter	Ditto.	
11	Ditto ditto	Riskend	Kilsyth.	
12	Ditto ditto	Twechar	Ditto.	
13	Ditto ditto	Tygetshaugh	Denny.	
14	Robert Addie & Sons, Langloan, Coatbridge.	Woodyetts	Ditto.	
	LANARKSHIRE FIRE-CLAY MINES.			
1	John Young, Chryston	Cardowan	Chryston.	
2	Garnkirk Co., Chryston, Glasgow	Garnkirk	Ditto.	
3	J. Binnie, Gartcosh, Glasgow	Gartcosh	Ditto.	
4	Andrew Yeats and Co., Shettleston, Glasgow.	Gartcraig	Shettleston.	
5	W. S. Dixon, Calder Ironworks, Coatbridge.	Garturk	Coatbridge.	
6	J. Meikle and Co., Gartveerie, Coatbridge.	Gartveerie	Ditto.	
7	W. S. Dixon, Govan Ironworks, Glasgow.	Govan	Glasgow.	
8	John Young, Chryston	Heathfield	Chryston.	
9	Robert Addie and Sons, Langloan, Coatbridge.	Rosehall	Coatbridge.	
	AYRSHIRE FIRE-CLAY MINES.			
1	Eglinton Iron Co., Kilwinning	Bartonholm	Kilwinning.	
2	Finnie and Finlay, Irvine	Bourtreehill	Irvine.	
3	Hon. F. F. Kennedy, Maybole	Dalquharran	Maybole.	
4	A. Kenneth, Kilwinning	Doura	Irvine.	
5	Ditto ditto	Eglinton	Kilwinning.	
6	J. and M. Craig, Kilmarnock	Hillhead	Kilmarnock.	
7	Ditto Irvine	Perceton	Irvine.	
8	J. McKnight, Kilmarnock	Plann	Kilmarnock.	
9	Armour and Fulton, Kilwinning	Redston	Kilwinning.	
	RENFREWSHIRE FIRE-CLAY MINES.			
1	R. Brown and Son, Ferguslie, Paisley.	Ferguslie	Paisley.	
2	Speirs & Gibb, Caledonia Works, Paisley.	Paisley	Ditto.	

List of Mines classed under the Coal Mines Regulation Act, &c.—*continued.*

No.	Owner or Company and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
	LANARKSHIRE SHALE MINE.			
1	Monkland Iron Co., Airdrie	Peep O'Day	Airdrie.	
	AYRSHIRE SHALE MINES.			
1	John Barr and Co., Irvine	Doura	Irvine.	
2	A. Finnie and Sons, Kilwinning	Fergushill	Ditto.	
	RENFREWSHIRE SHALE MINES.			
1	Merry & Cunningham, Paisley	Abercorn	Paisley.	
2	W. S. Dixon, Johnstone	Barbush	Johnstone.	
3	Allan Craig and Sons, Paisley	Blackstone	Ditto.	
4	Merry & Cunningham, Paisley	Clippens	Ditto.	
5	Ditto ditto	Douglas	Ditto.	
6	J. Liddell and Co., Johnstone	Fulton	Ditto.	
7	Jas. Anderson, Linnwood, Paisley	Linnwood	Ditto.	
8	Merry & Cunningham, Paisley	Milliken	Ditto.	
	STIRLINGSHIRE SHALE MINES.			
1	William Wilson, Banknock, Denny	Banknock	Denny.	
2	John Barr, Coney Park, Denny	Coney Park	Ditto.	

List of Mines classed under the Metalliferous Mines Act.

	LEAD.			
1	Duke of Buccleuch, Wanlockhead.	Wanlockhead	Wanlockhead.	
2	E. Blackcraig Mining Co.	Blackcraig, East	Newton Stewart.	
3	Islay Mining Co., Islay	Islay	Islay.	
4	Campbell and Jeffrey, Carsphairn, Dalry.	Woodhead	Carsphairn.	
	IRON ORE.			
1	Eglinton Iron Co., Lugar, Cumnock	Auchinlongford	Muirkirk.	
2	Coltness Iron Co., Newmains	Garpel	Ditto.	
	LIMESTONE.			
1	Jas. Young and Sons, Duntocher	Baljaffray	Kilpatrick, New.	
2	Jas. Allan, Lennoxtown	Balglass	Lennoxtown.	
3	John Kirk, ditto	Balgrochan	Ditto.	
4	Hurlet and Campsie Alum Co., Lennoxtown.	Campsie	Ditto.	
5	Eglinton Iron Co., Kilwinning	Clonbeith	Kilwinning.	
6	J. Stirling, Banknock	Castlecary	Banknock.	
7	John Lynch, Lennoxtown	Glorrat	Lennoxtown.	
8	W. Baird and Co., Coatbridge	Leckethill	Chryston.	
9	Carron Iron Co., Falkirk	Netherwood	Cumbernauld.	
10	L. Houston, Johnstone	Quarrelton	Johnstone.	
11	J. and T. Shaw, Paisley	Southbar	Paisley.	
	GANNISTER.			
1	Robert R. Horne, Tollcross	Shankraemuir	Chryston.	
	BUILDING STONE.			
1	William Stevenson, Cathcart	Orchard	Cathcart.	
2	Francis Brown, Cathcart	Williamwood	Ditto.	

Mr. Willis's Report—Coal Mines.

REPORT on the INSPECTION OF MINES, in the NEWCASTLE-ON-TYNE DISTRICT, comprising the North part of the County of DURHAM, the Counties of NORTHUMBERLAND and CUMBERLAND, for the year ending 31st December 1875.—By JAMES WILLIS, Esq., F.G.S.

SIR, Newcastle-on-Tyne, 31st March 1876.

I HAVE the honour to lay before you my Report on the inspection of mines under the Coal Mines Regulation Act, 1872, for this district during the year 1875.

The returns which have been forwarded to me in accordance with section 38 of the Act show the following particulars of minerals raised, and work persons employed.

1875.	Northumberland.	North Durham.	Cumberland.	Totals.
The minerals raised in statute tons—				
Coal	6,755,796	6,115,685	1,171,341	14,042,822
Fire-clay	102,433	165,926	43,875	312,234
Ironstone	12,008	—	261	12,269
	6,870,237	6,281,611	1,215,477	14,367,325
The persons employed—				
Underground.				
Boys of 10 and under 12	1	—	—	1
Boys of 12 and under 13	533	341	72	946
Male young persons of 13 and under 16	2,238	1,834	512	4,584
Males above 16	17,891	12,225	4,179	34,295
Total underground	20,663	14,400	4,763	39,826
Above ground.				
Boys of 10 and under 13	84	169	3	256
Girls „ „	—	—	—	—
Male young persons of 13 and under 16	495	420	99	1,014
Female „ „ „	—	—	17	17
Women above 16	5	6	326	337
Males „	4,107	3,213	1,300	8,620
Total above ground	4,691	3,808	1,745	10,244
Total number of persons employed in and about the mines	25,354	18,208	6,508	50,070

The following table shows the number of separate fatal accidents and the number of deaths resulting therefrom, over a period of five years, including the year under notice.

	Number of separate Accidents.					Number of Deaths resulting.				
	Year.					Year.				
	1871.	1872.	1873.	1874.	1875.	1871.	1872.	1873.	1874.	1875.
Explosions of firedamp	1	2	—	—	3	1	3	—	—	4
Falls of Coal and Stone.										
Falls of side	4	10	5	9	2	4	12	6	9	2
Falls of roof	24	21	41	18	22	24	21	42	18	22
Total falls	28	31	46	27	24	28	33	48	27	24

	Number of separate Accidents.					Number of Deaths resulting.				
	Year.					Year.				
	1871.	1872.	1873.	1874.	1875.	1871.	1872.	1873.	1874.	1875.
In Shafts.										
Overwinding	—	—	1	—	—	—	—	2	—	—
Ropes or chains breaking	—	—	—	1	—	—	—	—	1	—
Whilst ascending or descending	2	2	2	2	—	2	2	2	2	—
Falling into shaft from top	—	3	2	2	1	—	3	2	2	1
Things falling from top of shaft	—	1	1	1	—	—	1	1	1	—
Falling from part way down	3	3	4	1	2	3	3	4	1	2
Things falling from part way down	—	2	—	—	1	—	2	—	—	1
Sundries in shafts	2	1	1	2	1	2	1	1	2	1
Totals in shafts	7	12	11	9	5	7	12	12	9	5
Miscellaneous Underground.										
Explosions of gunpowder	—	—	5	5	3	—	—	5	5	3
Suffocation by gases	—	—	1	2	1	—	—	1	2	1
Irruptions of water	—	—	—	1	—	—	—	—	1	—
Falling into water	—	—	—	—	—	—	—	—	—	—
On incline and engine planes	7	2	4	8	7	7	2	4	8	7
By trams or tubs	9	11	11	9	12	9	11	11	9	12
By machinery	—	3	1	—	—	—	3	1	—	—
Sundries	5	2	1	2	6	5	2	1	3	6
Total miscellaneous underground	21	18	23	27	29	21	18	23	28	29
Total underground	57	63	80	63	61	57	66	83	64	62
On Surface.										
By machinery	1	1	1	1	2	1	1	1	1	2
By boilers bursting	—	—	3	—	—	—	—	3	—	—
By sundries	8	10	8	3	9	8	10	8	3	9
Total on surface	9	11	12	4	11	9	11	12	4	11
Gross totals	66	74	92	67	72	66	77	95	68	73

The comparisons of minerals raised, persons employed, accidents, deaths, and proportions between this year and the year 1874 are as below:

	1874.	1875.
Number of persons employed	49,129	50,070
Quantity of mineral raised	14,059,346	14,367,325
Separate fatal accidents	67	72
Lives lost by accidents	68	73
Persons employed, per separate fatal accident	733	695
Persons employed, per life lost	722	686
Tons of minerals raised per separate fatal accident	209,841	199,546
Tons of minerals raised per life lost	206,755	196,812

It is to be regretted that the above figures show a greater loss of life than those of last year, whilst the increased number of persons employed and minerals raised is inconsiderable, and it is still more to be regretted that the increase is mainly to be found in the number of lives lost by explosions of gas, from which cause the two preceding years were entirely free.

Explosions of Firedamp.

Three accidents have arisen from this cause, by which four lives have been lost. The first of these occurred in the yard seam, at Backworth Colliery, on 5th April. Workings in this seam, which had been temporarily abandoned three years previously, were being prepared for recommencing work there. Deceased, who was using a naked light, was driving a short cross-cut towards a winning headways, a temporary brattice being fixed near him to force the air round by the face—he had partially removed this brattice and travelled along the winning headways some distance, for what purpose was not clearly

ascertained, when the explosion took place. It was sworn in evidence that the brattice was also placed as a "fence" according to general rule 4. I have much reason to doubt that such was the intention. More care should have been taken by the agent in giving full and explicit instructions to the manager, not only that it was his wish to recommence the district, but what precautions were to be taken, and the precise means to be adopted in preparing for such recommencement. There was no evidence that the manager had examined the district before instructing the under officials to commence preparations, and the deceased himself violated both general and special rules in removing or partially removing a "fence" and in going to a place other than his working place.

An explosion of gas occurred in the Dudley Pit Cramlington Colliery on 13th May, causing the deaths of two workmen. An old gateway, the innermost holing of which had been blocked up by a fall, thus impeding the ventilation, was being prepared for a "stow board." Tram plates had been put in (but not laid in position) by a deputy who should have carefully examined the whole length of the place, he only examined, however, the distance it was intended to "lay" the tramway, which he found to be clear of gas. He then sent two men, deceased, who were using candles or naked lights to lay the way, and went himself to the outer end of the place where a shot was being prepared. When the shot was ready he called to deceased, asking them if they were coming out or going to remain where they were, where it appeared they would have been quite safe from any effects of the shot. Instead of doing either they went further into the place, and ignited a small accumulation of gas, and received injuries which caused their deaths. The whole of the details of this case showed want of caution, and a very imperfect knowledge of relative duties and responsibilities on the part of all concerned. Moreover, in my inquiries I found that special rules had not been established, although the Dudley Pit is one of a very large establishment consisting of six important collieries. A new manager had, however, just entered upon his duties after a protracted illness of his predecessor, and there was some reason also for thinking that the late Mr. Southern, my predecessor, had not seen it desirable to sanction, so far as he was concerned, the establishment of rules which it was stated had been submitted to him by the late manager.

On 13th May an explosion occurred at Ashby Colliery, in Cumberland. Deceased went from his own working place, into one adjoining, to seek some tools as was supposed. Gas had been discovered in the place when it was examined in the morning and a rail had been placed across the entrance by the deputy who had also warned the men not to go into it. Deceased was using a candle.

These explosions would not have taken place, had locked safety lamps been in the hands of the workmen. It is no doubt true that the ventilation in each case was inadequate, and that there was in the first and third cases disobedience of rules and verbal orders, but it is none the less true, and may be repeated, the explosions would not have taken place if safety lamps had been in use.

Accidents from all other causes.

The accidents from all other causes do not appear to have varied much in number from those recorded in previous years, there are no special features in any of the cases requiring notice.

The following is a list, in the usual form, of the fatal accidents which have occurred during the year.

LIST of the FATAL ACCIDENTS, and LOSS of LIFE arising therefrom, in Mr. WILLIS's DISTRICT, comprising the COUNTIES of CUMBERLAND and NORTHUMBERLAND, and the NORTHERN PORTION of the COUNTY of DURHAM, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Jan. 5	1	Pegswood	Morpeth	J. Frazer and Co.	Andrew Lee	Screenman	48	Crushed by a waggon at the screens	–	–	–	–	1	1
„ 13	2	Byermoor	Gateshead	J. Bowes and Partners	George Knott	Driver	12	Run over by tubs	–	–	–	1	–	1
„ 18	3	Washington	Ditto	W. Stobart	George Dixon	Hewer	29	Fall of stone	–	1	–	–	–	1
„ 25	4	Cowpen	Blyth	Cowpen and North Seaton Coal Co.	John Armstrong	Ditto	33	Fell on a block of coal	–	–	–	1	–	1
„ 26	5	Wearmouth	Sunderland	Bell, Stobart, and Co.	David Ramage	Driver	14	A horse fell on him, whose trace he had attached to a rope in motion.	–	–	–	1	–	1
„ 27	6	North Biddick	Washington	Sir G. Elliot and Co.	Thomas Kirsop	Hewer	47	Crushed by tubs	–	–	–	1	–	1
Feb. 5	7	Bedlington	Morpeth	Bedlington Coal Co.	Barney Coggan	Pumper	55	Run over by tubs on an inclined plane.	–	–	–	1	–	1
„ 8	8	Whitehaven	Whitehaven	Earl of Lonsdale	Alex. Harrison	Knocker	25	Run over by tubs on an engine plane	–	–	–	1	–	1
„ 23	9	Felling	Gateshead	Felling Coal, &c. Co.	George Lawson	Signalman	68	Ditto	–	–	–	1	–	1
„ 27	10	Usworth	Ditto	Jonassohn and Elliot	John Craig	Hewer	70	Crushed by a tub	–	–	–	1	–	1
Mar. 8	11	Marley Hill	Ditto	J. Bowes and Partners	John White	Ditto	27	Run over by tubs on an engine plane	–	–	–	1	–	1
„ 9	12	Brayton Domain	Maryport	Trustees of the late J. Harris.	Ben Sanderson	Deputy	67	Fall of stone	–	1	–	–	–	1
„ 15	13	Whitehaven	Whitehaven	Earl of Lonsdale	John McColley	Waggon-driver.	17	Run over by a waggon on the surface.	–	–	–	–	1	1
„ 17	14	Bebside	Morpeth	N. G. Lambert and Co.	Edward Jackson	Horse-shoer	67	Kicked by a horse	–	–	–	–	1	1
„ 19	15	Dinnington	Newcastle	J. Bowes and Partners	George Hope	Driver	17	Crushed by a tub	–	–	–	1	–	1
„ 19	16	East Holywell	Ditto	Hugh Taylor and Partners	John Nicholson	Rolleyway man.	58	Ditto	–	–	–	1	–	1
„ 30	17	Beamish	Gateshead	J. Joicey and Co.	Jos. Davison	Driver	15	Crushed by tubs running over him	–	–	–	1	–	1
April 1	18	South Tanfield	Ditto	Ditto	Robt. Newall	Assistant ontsetter.	16	Tubs fell on him in the cage hole	–	–	1	–	–	1
„ 5	19	Backworth	Newcastle	J. C. Lamb & Co.	John Ismay	Hewer	30	Explosion of gas	1	–	–	–	–	1
„ 20	20	Wallbottle	Ditto	R. O. Lamb	Jos. Grafton	Ditto	39	Fall of stone	–	1	–	–	–	1
May 5	21	Hebburn	Gateshead	Tyne Coal Co., Limited	Wm. Henderson	Timber drawer.	45	Ditto	–	1	–	–	–	1
„ 13	22	Cramlington	Newcastle	Lamb, Potter, and Scott	George Clasper Wm. Davison	Stonemen	35 54	Explosion of gas	1 1	–	–	–	–	2
„ 18	23	Seaton Delaval	Ditto	Lamb, Burdon, and Co.	Ralph Miller	Hewer	28	Fall of stone	–	1	–	–	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
May 18	24	Backworth	Newcastle	Maud, Taylor, and Co.	George Dixon	Driver	12	Crushed by tubs	–	–	–	1	–	1
„ 31	25	Asby	Workington	Executors of the late W. Irving.	John Doidge	Hewer	19	Explosion of gas. Died 13th June 1875.	1	–	–	–	–	1
June 23	26	Axwell	Gateshead	R. S. Bagnall and Sons	Wm. Hurst	Ditto	22	Fall of stone	–	1	–	–	–	1
„ 25	27	Harrington	Harrington	J. Bain and Co.	John Storey	Shaftman	41	Fell off cage while repairing the shaft.	–	–	1	–	–	1
July 1	28	South Tanfield	Gateshead	J. Joicey and Co.	James Beatham	Stoneman	25	Explosion of gunpowder	–	–	–	1	–	1
„ 1	29	Redheugh	Ditto	Redheugh Coal Co.	Ralph Jobes	Lampman	56	Fell off an engine pillar	–	–	–	–	1	1
„ 2	30	Boldon	South Shields	Harton and Hilda Coal Co.	John Sanderson	Engine cleaner.	55	Crushed by winding engine	–	–	–	–	1	1
„ 7	31	Beamish	Gateshead	J. Joicey and Co.	Ben Armstrong	Driver	13	Crushed by a tub	–	–	–	1	–	1
„ 7	32	Wardley	Ditto	J. Bowes and Partners	Geo. Cummings	Master stoneman.	42	Fell down shaft from Maudlin seam	–	–	1	–	–	1
„ 7	33	Whitehaven	Whitehaven	Earl of Lonsdale	John Daley	Driver	—	Crushed by cage	–	–	–	1	–	1
„ 7	34	Ditto	Ditto	Ditto	William Watson	Stableman	65	Crushed by corf or tub	–	–	–	1	–	1
„ 13	35	East Holywell	Newcastle	Hugh Taylor and Partners	Robert Hills	Hewer	46	Fall of coal	–	1	–	–	–	1
„ 14	36	Cowpen	Blyth	Cowpen and North Seaton Coal Co.	William Short	Ditto	45	Fall of stone	–	1	–	–	–	1
„ 21	37	Ouston	Gateshead	Hunt, Perkins, and Co.	John Maddison	Ditto	24	Ditto	–	1	–	–	–	1
„ 22	38	Tyne Main	Ditto	E. Robson and Co.	John Dorman	Ditto	41	Ditto Died August 27th	–	1	–	–	–	1
Aug. 12	39	Seghill	Newcastle	Laycock and Nicholson	Henry Towns	Wailer	12	Run over by waggons	–	–	–	–	1	1
„ 19	40	Elswick	Ditto	Elswick Colliery Co.	Matthew Dobson	Helper-up	14	Crushed by tubs on engine plane, while attempting to get on set.	–	–	–	1	–	1

List of Fatal Colliery Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Aug. 19	41	East Holywell -	Newcastle -	Hugh Taylor and Partners	James Maddison -	Horse-driver	28	Run over by waggons - -	–	–	–	–	1	1
„ 19	42	Midgeholme -	Carlisle -	M. Thompson and Sons -	Thomas Hankin -	Incline boy	14	Run over by tubs on incline plane, owing to a chain breaking.	–	–	–	1	–	1
„ 27	43	Harton -	South Shields -	Harton and Hilda Coal Co.	J. M. Johnson -	Shifter -	27	Fall of stone - - -	–	1	–	–	–	1
„ 30	44	Blaydon Burn -	Gateshead -	Joseph Cowen and Co. -	John Lockey -	Hewer -	40	Struck his head while walking out bye.	–	–	–	1	–	1
Sept. 1	45	West Sleekburn	Morpeth -	Bedlington Coal Co. -	George Bolam -	Driver -	15	Crushed by tubs - - -	–	–	–	1	–	1
„ 1	46	Backworth -	Newcastle -	J. C. Lamb and Co. -	James Scott -	Hewer -	32	Fall of stone - - -	–	1	–	–	–	1
„ 8	47	East Pontop -	Gateshead -	C. Bainbridge and Co. -	John Dawson -	Furnaceman	25	Fell down air shaft, 45 fms., apparently intentional.	–	–	1	–	–	1
„ 8	48	West Wylam -	Prudhoe -	Cookson and Co. -	Robert Shotton -	Hewer -	25	Suffocated by stythe - -	–	–	–	1	–	1
„ 13	49	Tanfield Moor -	Gateshead -	J. Joicey and Co. -	Matthew Reay -	Ditto -	20	Fall of stone - - -	–	1	–	–	–	1
„ 16	50	Townley -	Ditto - -	A. Potter and Co. -	John Fowler -	Set rider -	20	Fall of stone from side - -	–	1	–	–	–	1
„ 20	51	Gosforth -	Newcastle -	J. Bowes and Partners -	Stephen Sams -	Engine-wright.	26	Crushed by cage while removing a baulk.	–	–	1	–	–	1
„ 24	52	Coxlod e -	Ditto - -	Lambert and Co. -	Charles Graham -	Driver -	—	Kicked by a horse - -	–	–	–	1	–	1
Oct. 1	53	West Pelton -	Chester-le-Sreet	J. Joicey and Co. -	Robert Garnham -	Screenman -	64	Crushed by a tub falling from small coal cage.	–	–	–	–	1	1 1
„ 4	54	Harton -	South Shields -	Harton and Hilda Coal Co.	James Wymess -	Driver -	14	Crushed between tub and prop -	–	–	–	1	–	1
„ 6	55	Clifton -	Workington -	West Cumberland Iron and Steel Co.	John Cameron -	Miner -	38	Fell from scaffold on the surface -	–	–	–	–	1	1
„ 8	56	Springwell -	Gateshead -	J. Bowes and Partners -	Robert Gowland -	Shifter -	48	Fall of stone - - -	–	1	–	–	–	1
„ 9	57	South Pontop -	Annfield Plain -	Messrs. Ritson - -	Daniel Henry -	Screenman -	—	Fell off screens - - -	–	–	–	–	1	1
„ 11	58	Seaton Delaval -	Newcastle -	Lamb, Burdon, and Co. -	Thomas Taylor -	Stoneman -	57	Shot exploded before he was clear -	–	–	–	1	–	1
Nov. 2	59	West Cramlington.	Ditto - -	J. C. Lamb and Co. -	George Young -	Putter -	16	Fall of stone. Died on 16th November 1875.	–	1	–	–	–	1
„ 17	60	East Holywell -	Ditto - -	Hugh Taylor and Partners	John Crozer -	Water leader	30	Foot crushed by cage. Lockjaw set in.	–	–	–	1	–	1
„ 25	61	Bowthorn -	Whitehaven -	Whitehaven Hæmatite Iron Co.	Charles Toeman -	Fireman -	36	Fell between cog-wheels of pumping engine.	–	–	–	–	1	1

List of Fatal Colliery Accidents—*concluded.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Dec. 2	62	Felling -	Gateshead -	Felling Coal, &c. Co. -	J. C. Rain -	Hewer -	25	Crushed by set of tubs on engine plane.	–	–	–	1	–	1
„ 8	63	Asby - -	Workington -	Executors of the late W. Irving.	William Jardon -	Setter on -	40	Fall of stone - - -	–	1	–	–	–	1
„ 9	64	Cambois -	Blyth - -	Cowpen and North Seaton Coal Co.	Robert Nixon -	Hewer -	34	Ditto - - -	–	1	–	–	–	1
„ 10	65	Ditto - -	Ditto -	Ditto - - -	William Hughes -	Ditto -	31	Returned to his place just as his shot went off. Coal fell on him.	–	–	–	1	–	1
„ 10	66	Whitehaven -	Whitehaven -	Earl of Lonsdale - -	James Lankett -	Ditto -	36	Fall of roof - - -	–	1	–	–	–	1
„ 13	67	South Medomsley	Gateshead -	J. Vaughan & Co. -	William Jeffrey -	Ditto -	43	Fall of sagre - - -	–	1	–	–	–	1
„ 13	68	Tanfield Moor -	Ditto -	J. Joicey and Co. -	William Nixon -	Ditto -	54	Fall of stone - - -	–	1	–	–	–	1
„ 15	69	Lintz - -	Ditto -	Gooch & Co. - -	Robert Emerson -	Ditto -	23	Ditto - - -	–	1	–	–	–	1
„ 18	70	Tanfield Moor -	Ditto -	J. Joicey & Co. -	Francis McCabe -	Driver -	14	Crushed by tubs - -	–	–	–	1	–	1
„ 20	71	Springwell -	Ditto -	J. Bowes and Partners -	Nicholson Atkinson	Shifter -	18	Fall of stone - - -	–	1	–	–	–	1
„ 23	72	Seaton Delaval -	Newcastle -	Lamb, Burdon, and Co. -	Michael Gormley -	Ditto -	52	Ditto - - -	–	1	–	–	–	1
								Total - - -	4	24	5	29	11	73

Most of the inquests held in connexion with these fatalities have been attended either by myself or by my assistant, and such recommendations have been made as appeared in any way likely to prevent a repetition of such occurrences.

In addition to this list I have received a large number of notices of non-fatal accidents, but inasmuch as there is great diversity of opinion as to when such notices ought to be sent, and as it is difficult to obtain unformity in this respect, I do not think it would serve any good purpose to particularise them more than by giving the numbers under the various heads.

There have been reported:

10	explosions of gas causing injury to	13	persons
107	falls in mine „ „	110	„
6	in shafts „ „	6	„
106	miscellaneous underground „	113	„
23	on surface causing injury to	25	„

The dates on which the above explosions of gas occurred were as follows: 30th January, 24th February, 6th and 25th March, 6th and 16th September, 27th October, 19th and 22nd November and 31st December. In all cases but one the gas was ignited by naked lights; in the excepted case the gas was ignited by a shot improperly fired before carefully examining the working.

There have been other fatal accidents which I have not included in the list as the sufferers were not work people, or because the connexion of their work with the absolute production of the minerals was so indistinct as to make it appear to me to be somewhat misleading to include them.

These include three men (workmen) who died from heart disease, one, not a workman, crushed by waggons on the surface immediately after recovery from an attack of fever; one, a girl, fell off a colliery haystack; one, a girl, injured (afterwards died) at a brickworks on the colliery; one, a girl, killed whilst gathering coals on the colliery branches; one, a man killed on the colliery railway about a mile from the pit. There was also one case of suicide by a man precipitating himself down an old shaft, and a man lost his life by falling down an old shaft, not known to be in existence, whilst gathering brambles.

The following list of collieries and mines have been corrected as far as possible, and I believe it is now very complete. There may be omissions as regards some of the very small landsale collieries, in the remote parts of Northumberland more particularly.

List of Mines classed under the Coal Mines Regulation Act, in Mr. Willis's District, 1875–76.

1. Collieries in Northumberland.

Owner or Company, and Postal Address.	Name of Colliery.	Where situated.	Remarks.
Armstrong, J., & B., Bellingham, Northumberland.	Bows Hill	Bellingham	Coal, Landsale.
	Gunnerton	Hexham	Do. do.
	Hareshaw Head	Bellingham	Do. do.
Armstrong, J. & J., Otterburn, Northumberland.	Brown Rigg	Otterburn	Do. do.
Armstrong, Sir W. G., & Co., Ridsdale, Northumberland.	Stiddle Hill	Ridsdale	Do. and ironstone.
Bainbridge, E. & Co., Eltringham Colliery, Prudhoe-on-Tyne.	Eltringham	Prudhoe-on-Tyne	Do. and fire-clay.
Bainbridge & White, North Fenham Colliery, Newcastle-on-Tyne.	North Fenham	Newcastle-on-Tyne.	Do., Landsale.
Bates, Thomas, Heddon Banks Colliery, Newastle-on-Tyne.	Heddon Banks	Do.	Do. and fire-clay.
Bedlington Coal Co., Bedlington, Northumberland.	Barrington	Morpeth	Do.
	Bedlington	Do.	Do.
	West Sleekburn	Do.	Do.
Benson, W., Montague Main Colliery, Newcastle-on-Tyne.	Fourstones	Hexham	Do.
	Montague Main	Newcastle-on-Tyne.	Do. and fire-clay.
Bewick, Elizabeth, Mickley Bank Colliery, Stocksfield-on-Tyne.	Mickley Bank	Stocksfield	Do., Landsale.
Bowes, J., and Partners, Killingworth Colliery, Newcastle-on-Tyne.	Dinnington	Newcastle-on-Tyne.	Do.
	Gosforth	Do.	Do.
	Killingworth	Do.	Do.
	Seaton Burn	Do.	Do.
Burn, J. H., Stobswood Colliery, Acklington, Northumberland.	Stobswood	Acklington	Do.
Burdon, A. E., Seaton Delaval Colliery, Newcastle-on-Tyne.	Seaton Delaval	Newcastle-on-Tyne.	Do. and fireclay.
Caisley, J. & Sons, Forest Burn Colliery, Brinkburn, Rothbury.	Forest Burn	Rothbury	Do., Landsale.
Carr, Cochrane, & Co., South Benwell Colliery, Newcastle-on-Tyne.	South Benwell	Newcastle-on-Tyne.	Do. and fire-clay.
Carr, Thomas, & Son, Montague Fire-clay Mine, Newcastle-on-Tyne.	Montague Fire-clay Mine.	Do.	Do. do.
Charlton, William, Sooty Row Colliery, Gunnerton, Hexham.	Sooty Row	Gunnerton	Do., Landsale.
Chevington Coal Co., Chevington Colliery, Acklington.	Chevington	Chevington	Do.
Chisholm, James, Otterburn Colliery, Elsdon, Northumberland.	Otterburn	Otterburn	Do., Landsale.
Cookson, W. I. & Co., Mickley Colliery, Prudhoe-on-Tyne.	Mickley	Prudhoe-on-Tyne	Do.
	Prudhoe	Do.	Do.
	West Wylam	Do.	Do.
Cowpen & North Seaton Coal Co., Cowpen Colliery Office, Newcastle-on-Tyne.	Cambois	Blyth	Do.
	Cowpen	Do.	Do.
	Newsham	Do.	Do.
	North Seaton	Do.	Do.
Dinning, Joseph, Langley Mills	Carts Bogg	Langley Mills	Do., Landsale.
	Stublick	Do.	Do. do.
Dunn, R., North Wylam Colliery, Wylam, Newcastle-on-Tyne.	North Wylam	Wylam	Do.
Elswick Colliery Co., Elswick Colliery, Newcastle-on-Tyne.	Elswick	Newcastle-on-Tyne.	Do. do.
Forster, S., & Co., Wylam, Newcastle-on-Tyne.	Callerton	Wylam	Do., Landsale.
	Wylam Hills	Do.	Do. and fire-clay.
Frazer, S. H. & Co., Pegswood Colliery, Morpeth.	Pegswood	Morpeth	Do.
Garwood & Taynter, Shilbottle Colliery, Alnwick.	Shilbottle	Alnwick	Do.
Gibson, W. C., Scotswood, Newcastle-on-Tyne.	Benwell Fire-clay	Newcastle-on-Tyne.	Do. and fire-clay.

List of Mines classed under the Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Colliery.	Where situated.	Remarks.
Grace & Tone, Capheaton, Northumberland.	Kirkheaton	Capheaton	Coal, Landsale.
Hall, J., Whittington Colliery, Whittington, Northumberland.	Whittington	Whittington	Do. do.
Hall, Matilda, Settlingstones Lead Mine, Hexham.	Thorn Grafton	Haltwhistle	Do. do.
Harrison, Carr, & Co., Radcliffe Colliery, Acklington.	Radcliffe	Acklington	Do. and fire-clay.
Henshaw & Melkridge Collieries Co., Haltwhistle.	Henshaw & Melkridge	Haltwhistle	Sinking.
Horner, Netherwitton, near Rothbury	Netherwitton	Netherwitton	Coal, Landsale.
Horsley Wood Coal Co., Wylam, Newcastle-on-Tyne.	Horsley	Wylam	Do.
Hudspith, William, South Tyne Fire-clay Works, Haltwhistle.	South Tyne Fire-clay	Haltwhistle	Do. and fire-clay.
Hutchinson & Co., Preston Colliery, North Shields.	Preston	North Shields	Do.
Jackson, Bean, & Co., Howard's West Hartley Colliery, Morpeth.	Netherton	Morpeth	Do.
Jackson, J., Brinkburn, Rothbury	Brinkburn	Rothbury	Do., Landsale.
Johnson, John, Edgewell Colliery, Prudhoe-on-Tyne.	Edgewell	Prudhoe-on-Tyne	Do. and fire-clay.
Lamb, Joseph, Carrycoats Colliery, Bellingham.	Carrycoats	Bellingham	Do., Landsale.
Lamb, J. & Co., Backworth Colliery, Newcastle-on-Tyne.	Backworth	Newcastle-on-Tyne.	Do. and fire-clay.
	West Cramlington	Do.	Do.
Lamb, W. & R. O., Walbottle Colliery, Newcastle-on-Tyne.	Walbottle	Do.	Do.
Lambert, M. W., Widdrington Colliery, Northumberland.	Widdrington	Widdrington	Do.
Lambert, N. G., & Co., Bebside Colliery, Morpeth.	Bebside	Blyth	Do.
	Burradon	Newcastle-on-Tyne.	Do.
	Choppington	Blyth	Do.
	Cox Lodge	Newcastle-on-Tyne.	Do. and fire-clay.
	Walker	Do.	Do. do.
Laws, Tone, & Fryer, Plashetts Colliery, Northumberland.	Plashetts	Plashetts	Do. do.
Lawson, Rev. E., Longhirst Colliery, Morpeth.	Longhirst	Morpeth	Do.
Laycock & Nicholson, Seghill Colliery, Newcastle-on-Tyne.	Seghill	Newcastle-on-Tyne.	Do.
Longwitton and Greenleighton Coal and Lime Co., Longwitton, Northumberland.	Longwitton	Longwitton	Do.
Makepeace, J., & R., Barcombe Colliery, Haltwhistle.	Barcombe	Haltwhistle	Do., Landsale.
Morrison, J., & Co., Acomb Colliery, Hexham.	Acomb	Hexham	Do.
Nicholson, G., Long Framlington, Northumberland.	Long Framlington	Long Framlington.	Do., Landsale.
Northumberland, Duke of	Ingoe	Matfen	Do. do.
Potter, W. A., Cramlington Colliery, Newcastle-on-Tyne.	Cramlington	Newcastle-on-Tyne.	Do.
Plaenmellor Coal Co., Haltwhistle	Plaenmellor	Haltwhistle	Do. do.
Priestman & Co., Ashington Colliery, Morpeth.	Ashington	Morpeth	Do.
Robinson, Thomas, Whittonstall, Stocksfield.	Grey Mare Hill	Whittonstall	Do., Landsale.
Ridley, G., Snabdeth, Bellingham	Carriteth	Bellingham	Do. do.
Robson, M., Falstone, Northumberland	Shilburn Haugh	Falstone	Do. do.
Sanderson, W. & Co., Lickar Colliery, Lowick, Northumberland.	Lickar	Lowick	Do. do.
Salsbury, A. L. W., Barmoor Colliery, Beal, Northumberland.	Barmoor	Beal	Do. do.

List of Mines classed under the Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Colliery.	Where situated.	Remarks.
Scott, J. O., & Co., Delaval Benwell Colliery, Newcastle-on-Tyne.	Delaval Benwell	Newcastle-on-Tyne.	Coal and fire-clay.
Scremerston and Shoreswood Coal Co., Scremerston, Berwick.	Billy Law	Scremerston	Do.
	Felkington	Do.	Do.
	Scremerston	Do.	Do.
Shire Moor Coal Co., Shire Moor Colliery, Newcastle-on-Tyne.	Shire Moor	Newcastle-on-Tyne.	Do.
Short, J., & Co., Park House Colliery, Morpeth.	Park House	Morpeth	Coal, Landsale.
South Tyne Colliery, Owners of, Haltwhistle.	South Tyne	Haltwhistle	Do.
Sowerby & Andrews, Broomhill Colliery, Acklington.	Broomhill	Acklington	Do. and fire-clay.
Spencer & Co., Throckley Colliery, Newcastle-on-Tyne.	Throckley	Newcastle-on-Tyne.	Do.
Stannington Coal Co., Stannington Colliery, Morpeth.	Stannington	Morpeth	Do.
Stephenson, Wm., & Sons, Old Throckley Colliery, Newcastle-on-Tyne.	Old Throckley	Newcastle-on-Tyne.	Do. and fire-clay.
Taylor, H., & Partners, East Holywell Colliery, North Shields.	East Holywell	North Shields	Do.
Temple, Thos., Churm Colliery, Wingates, Morpeth.	Churm	Wingates	Do., Landsale.
Thompson, J., Brier Edge Colliery, Bellingham.	Brier Edge	Bellinghan	Do. do.
Thompson, J., Longhirst Grange Colliery, Morpeth.	Longhirst Grange	Morpeth	Do. do.
Thompson, M., & Sons, Naworth Colliery, Milton, Carlisle.	Blenkinsop	Haltwhistle	Do.
Turner & Young, Prestwick Colliery, Ponteland, Newcastle-on-Tyne.	Prestwick	Prestwick	Do., Landsale.
Walker, William, Hedley Colliery, Stocksfield.	Hedley	Stocksfield	Do. do.
Walton & Cowper, Fallowfield Colliery, Hexham.	Fallowfield	Hexham	Do. do.
Waterford, Marchioness of	Ford Moss	Ford	Do. do.
Whitley & Monkseaton Coal Co., Wentley Colliery, North Shields.	Whitley	North Shields	Do.
Widdrington, S. T., Newton-on-the-Moor Colliery, Northumberland.	Newton-on-the-Moor	Shilbottle	Do., Landsale.
Wilson & Crawhall, Coanwood Colliery, Haltwhistle.	Coanwood	Haltwhistle	Do.
Wood & Slinn, Ulgham Grange Colliery, Morpeth.	Ulgham Grange	Morpeth	Do.
Wright, R., Lowick Colliery, Lowick, Northumberland.	Lowick	Lowick	Do., Landsale.
Wylam Wood Coal Co., Wylam, Newcastle-on-Tyne.	Wylam	Wylam	Do., abandoned.

2. Collieries in the Northern Division of Durham.

Owner or Company, and Postal Address.	Name of Colliery.	Where situated.	Remarks.
Bagnall, R. S., & Sons, Axwell Colliery, Gateshead.	Axwell	Gateshead	Coal.
Bainbridge, C., & Co., East Castle Colliery, Lintz Green.	East Castle	Annfield Plain	Do.
	East Pontop	Do.	Do.
Bell, Stobart, & Co., Wearmouth Colliery, Sunderland.	Wearmouth	Sunderland	Do.
Bowes, J., & Partners, Marley Hill Colliery, Gateshead.	Andrews House	Gateshead	Do.
	Burnopfield	Do.	Do. and fire-clay.
	Byer Moor	Do.	Do.
	Dipton	Do.	Do.
	Kibblesworth	Do.	Do.
	Marley Hill	Do.	Do. and fire-clay.
	Norwood	Do.	Do.
	Pontop	Do.	Do.
	Springwell	Do.	Do.
	Shipcote	Do.	Do.
	Wardley	Do.	Do.

List of Mines classed under the Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Colliery.	Where situated.	Remarks.
Burdon, A. E., Team Colliery, Gateshead	Team	Gateshead	Coal and fire-clay.
Bute, Marquis of	Garesfield	Do.	Do. do.
Cowen, Joseph, & Co., Blaydon, Newcastle-on-Tyne.	Blaydon Burn	Do.	Do. do.
Dickinson, R., & Co., South Derwent Colliery, Annfield Plain.	Carr House	Annfield Plain	Do. do.
	Dipton, New Pit	Do.	Do.
	Shield, Row	Do.	Do.
	South Derwent	Do.	Do.
Elliot, Sir G., & Co., Usworth Colliery, Washington.	North Biddick	Do.	Do.
	Pensher	Do.	Do. and fire-clay.
	Usworth	Do.	Do.
Felling Coal, Iron, and Chemical Co., Felling Colliery, Gateshead.	Felling	Do.	Do. and fire-clay.
Forster, R., Sheriff Hill Colliery, Gateshead.	Gateshead Fell	Gateshead	Coal, Landsale.
	Sheriff Hill	Do.	Do.
Gooch & Co., Lintz Colliery, Lintz Green.	Lintz Colliery	Do.	Do. and fire-clay.
Hannington, Mary, Axwell Park Colliery, Gateshead.	Axwell Park	Do.	Do.
Harton Coal Co., Harton Colliery, South Shields.	Boldon	South Shields	Do.
	Harton	Do.	Do.
	Saint Hilda	Do.	Do.
Henderson, Anderson, & Co., Heworth Colliery, Gateshead.	Heworth	Gateshead	Do. and fire-clay.
Hopper, J., & Co., Deckham Hall Colliery, Gateshead.	Deckham Hall	Do.	Do. Landsale.
Hunt, Perkins, & Co., Ouston Colliery, Birtley, Gateshead.	Bewick Main	Do	Do. and fire-clay.
	Ouston	Do.	Do.
	South Pelaw	Do.	Do.
	Urpeth	Do.	Do.
Joicey, J., & Co., Tanfield Lea, Gateshead.	Beamish	Do.	Do.
	East Stanley	Do.	Do.
	Tanfield, East	Do.	Do. and fire-clay.
	Do. Lea	Do.	Do.
	Do. Moor	Do.	Do. and fire-clay.
	Do. South	Do.	Do.
	Twizel	Do.	Do.
	West Pelton	Do.	Do.
Potter, A., & Partners, Townley Colliery, Blaydon-on-Tyne.	Stella	Do.	Do. and fire-clay.
	Townley	Do.	Do. do.
Priestman and Peel, Victoria Garesfield Colliery, Gateshead.	Victoria Garesfield	Do.	Do. do.
Ramsay, G. H., & Co., Blaydon Main Colliery, Blaydon-on-Tyne.	Blaydon Main	Do.	Do. do.
Redheugh Coal Co., Redheugh Colliery, Gateshead.	Redheugh	Do.	Do.
Richardson, T., & Co., South Garesfield Colliery, Lintz Green.	South Garesfield	Do.	Do. and fire-clay.
Ritson, H., Broomhill Colliery, Ebchester	Broom Hill	Do.	Do., Landsale.
Ritson & Co., South Pontop Colliery, Annfield Plain.	South Pontop	Do.	Do.
Robson, E., & Co., Tyne Main Colliery, Gateshead.	Tyne Main	Do.	Do.
Simpson, R., Ryton-on-Tyne	Greenside	Do.	Do., Landsale.
Snowball, J., Whickham Colliery, Gateshead.	Whickham	Do.	Do. do. and fire-clay.
Stobart, W., Washington Colliery, Washington.	Washington	Do.	Do.
Vaughan, T., & Co., South Medomsley Colliery, Lintz Green.	South Medomsley	Do.	Do. and fire-clay.
Wallsend & Hebburn Coal Co., Hebburn Colliery, Gateshead.	Hebburn	Do.	Do.
Watson, H. W., Hamsterley Colliery, Lintz Green.	Hamsterley	Do.	Do. and fire-clay.
Whitburn Coal Co.	Whitburn	Sunderland	Sinking.

List of Mines classed under the Mines Regulation Act, &c.—*continued.*

3. Collieries in Cumberland.

Owner or Company, and Postal Address.	Name of Colliery.	Where situated.	Remarks.
Bain, James, & Co., Harrington Iron Works, Workington.	Harrington	Harrington	Coal and fire-clay.
Baird, William, & Co., Moorside Colliery, Whitehaven.	Moorside	Whitehaven	Do.
Cape & Co., Seaton Fire-clay Works, Maryport.	Seaton Fire-clay	Maryport	Do. and fire-clay.
Dees, J. G., Whitehaven	Whitehaven Fire-clay	Whitehaven	Do. do.
Fletcher, Messrs., & Co., Allhallows Colliery, Mealsgate, Carlisle.	Allhallows	Carlisle	Sinking.
Garbutt, J. H., Workington Colliery, Workington.	Workington	Workington	Coal.
Gibson, Cook, & Musgrove, Frizzington Colliery, Whitehaven.	Frizzington	Whitehaven	Do.
Gilgarrow Coal Co., Gilgarrow Colliery, Carnforth.	Gilgarrow	Workington	Do.
Graham, J., Branthwaite Fire-clay Works, Workington.	Branthwaite	Do.	Do. and fire-clay.
Greveson, Geo., & Son, Dean Moor Colliery, Workington.	Dean Moor	Do.	Do.
Harris, J., Trustees of late, Ellenborough, Maryport.	Brayton Domain	Maryport	Do. and fire-clay.
	Ellenborough	Do.	Do. do. and iron-stone.
	Nepgill	Do.	Do. and fire-clay, abandoned.
Harris & Carlton, Dovenby Colliery, Maryport.	Dovenby	Do.	Do.
Irving, William, Trustees of late, Asby Colliery, Workington.	Asby	Workington	Do.
Lamplugh Colliery Co., Lamplugh Colliery, Workington.	Lamplugh	Do.	Do.
Londsdale, Earl of, Whitehaven Collieries, Whitehaven.	Whitehaven	Whitehaven	Do.
Lucock, Mary, Gill Head Colliery, Maryport.	Gill Head	Maryport	Do. and fire-clay.
Maryport Hæmatite Iron Co., Maryport	Bolton	Do.	Do.
Mulcaster, Mrs., Camerton Colliery, Maryport.	Camerton	Do.	Do. and fire-clay.
Mulcaster, Wm., & Co., Crosby and Gilcrux Collieries, Maryport.	Crosby and Gilcrux	Do.	Do.
	Saint Helens	Do.	Do. and fire-clay.
Parker, W., & Co., Eagle Gill Fire-clay Works, Maryport.	Eagle Gill	Do.	Do. do.
Thompson, M., & Son, Naworth Colliery; Office, Milton, Carlisle.	Greenside	Carlisle	Do.
	Midgeholme	Do.	Do.
	Tarn House	Do.	Do.
West Cumberland Iron & Steel Co., Clifton Colliery, Workington.	Clifton	Workington	Do. and fire-clay.
	Melgramfritz	Do.	Do. do.
Whitehaven Hæmatite Iron Co., Whitehaven.	Bowthorn	Whitehaven	Do. do.
Wilson, R., Broughton Moor & Flimby Collieries, Maryport.	Broughton Moor	Maryport	Do.
	Flimby	Do.	Do. and fire-clay.
	Seaton Moor	Do.	Do. do.
Wright, J., Dearham Colliery, Maryport.	Dearham	Do.	Do.
Wythemoor Colliery Co., Workington	Wythemoor	Workington	Do. and fire-clay.

In the early part of the year, with your permission, I instituted proceedings against Mr. Joseph Laycock, owner of Seghill Colliery, for having in use in the mine iron or steel prickers and iron or steel tamping rods or stemmers; also against Mr. William Nicholson, as agent of the same colliery, for storing gunpowder in the mine; and also against Mr. John Douglas, as manager, for permitting powder to be taken into the mine in larger quantities than four pounds in each case or canister. The cases should have been heard at Tynemouth, but it was found by the magistrates then sitting that they were prohibited hearing them, as they were all interested in mines as owners. Moreover, amongst the whole of the gentlemen attending this Court only one was in a position under section 67 of the Act to adjudicate. Under these circumstances, and Mr. Laycock (himself a magistrate) having publicly expressed his regret that the law had not been fulfilled, and also on his paying all expenses, including my solicitor's fee, and promising that the provisions of the Act should be more carefully attended to in future, I asked and obtained leave to withdraw the summonses.

Throughout the district the year has been characterized as one of extreme depression, low prices for coals and coke have obtained, and reductions of wages have taken place. Up to the date of this Report the prospects do not appear at all to be better; many of the collieries are working little more than half time, and a great deal of distress prevails.

Notwithstanding the large numbers of lives lost annually in mining operations it is a fact, which I believe is not generally recognised, that in proportion to the number of persons employed there is really a much greater exemption from loss of life than in some other employments—railways for example. I gather from a speech made by Sir R. W. Carden as chairman of a meeting on behalf of the Railway Servants Orphanage held in the Mansion House in October of last year (1875), that on the authority of Board of Trade returns in a total of 270,000 persons employed on the railways of the kingdom in 1874, 1,000 lost their lives. If these figures are correct they would show that the number of persons employed per life lost is equal to 270. In the same year (1874) in mines under the Coal Mines Regulation Act the number employed per life lost was 510 and under the Metalliferous Mines Act 609, or in the entire mining industry of the kingdom 519.

It is interesting also to notice the statistics of the earlier years of legislative interference in mining operations and compare them with the most recent available particulars. A fair test, and I believe the only accurate one, of improvement or otherwise in the relative safety of mining work as between the present time and the earlier years already spoken of, is to be obtained by comparing the quantities of minerals raised with the number of lives lost. Thus it appears in 1861, the first year in which the quantities raised was given, 91,240 tons were worked for every life lost, whilst in 1874, the latest year for which I can obtain the figures, 133,251 tons were raised for each life lost. In connexion with figures which thus show such a remarkable degree of comparative safety it would be interesting to consider the varied circumstances of mining as carried on at the respective dates quoted, for example, during this period mines have been opened of much greater depth and may fairly in consequence be considered more dangerous; larger and more powerful machinery, and to a much greater extent, has been introduced; and the vastly increased quantities have been raised from areas very little, if any, larger than in 1861; all tending to an increase of what may be termed the expectancy of loss of life, such increased tendency may, I think, safely be represented by 5 per cent. Production having increased 62 per cent. as between 86,039,214 tons in 1861 and 140,713,832 tons in 1874, and adding the above 5 per cent., thus making 67 per cent., it would be fair to assume that the loss of life might have increased in a somewhat similar proportion and thus the 943 lives lost in 1861 would have in 1874 reached 1,584. The deaths in 1874 were 1,056, or fully 50 per cent. less than might have been expected under such a view of the subject.

I believe care has been exercised during the year to comply with the requirements of the Act as regards the ages at which boys and young persons may be employed, and also as regards the attendance at schools of boys under certain ages. One of the professed objects in seeking, in the present Act, for a shortening of the hours of employment of lads under 16, viz.: the increased facilities for attending night schools and otherwise improving their minds, has, so far as my experience goes, and I have made much inquiry on the subject, been entirely fruitless. I do not think there are more night schools in the colliery villages, nor do I think where they do exist that they are better attended.

I have, &c.,
JAMES WILLIS.

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

Mr. Willis's Report—Metalliferous Mines.

REPORT on the INSPECTION of MINES in the NEWCASTLE-ON-TYNE DISTRICT, comprising the Counties of CUMBERLAND, NORTHUMBERLAND, and the detached part of the County of LANCASHIRE, from the 31st December 1874 to the 31st December 1875.—By JAMES WILLIS, Esq., F.G.S.

SIR, Newcastle-on-Tyne, 31st March 1876.

IN accordance with Section 20 of the Metalliferous Mines Act, 1872, I have the honour to lay before you my Report for the year 1875.

The district assigned to me under this Act, of which I took charge in the early part of the year, is a portion of the district lately in the care of one of my colleagues, Mr. T. F. Evans, and comprises the counties of Cumberland and Northumberland, (with the exception of a few mines in the latter county), and the detached part of the county of Lancashire, known as North Lancashire.

Under the Act passed in the last session of Parliament, "The Metalliferous Mines Regulation Act, 1875," it is provided that the Returns, hitherto not required to be forwarded until the 1st August in every year, shall be forwarded on or before the 1st February, this date being coincident with that on which returns under the Coal Mines Regulation Act are to be sent. I have experienced some little difficulty in getting these Returns in in good time, but I trust that the steps I have taken to make all the mine owners and agents acquainted with the new date will cause me to have little trouble in this respect in the future.

The mineral productions in this district are barytes, copper, iron, lead, and zinc ores, and whinstone, by far the largest production being the iron ore or hæmatite, obtained in Cumberland and North Lancashire.

Following up the practice of my predecessor, I give a statement below of the numbers of persons employed in and about the mines, and the quantities (in statute tons), of the various products raised or sold in each county.

	Underground.				Above ground.									
	Male Persons ages.				Ages 8 to 13.		Ages 13 to 18.		Ages above 18.			Total underground and above ground.	Mining Produce.	Quantities.
	Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.	Total.			
														Tons.
Cumberland	6	10	598	614	27	—	132	—	3	128	290	904	Barytes	884
													Copper Ore	130
													Lead Ore	2,259
													Zinc Ore	1,443
Ditto	14	191	3,965	4,170	25	—	147	—	—	1,231	1,403	5,573	Iron Ore	1,359,488
Lancashire, North	—	7	75	82	16	—	23	—	—	20	59	141	Copper Ore	1,372
Ditto	—	—	1,812	1,812	7	—	162	—	1	1,105	1,275	3,087	Iron Ore	882,840
Northumberland	1	3	344	348	13	—	90	—	—	112	215	563	Barytes	4,336
													Lead Ore	4,163
													Whinstone	1,729
	21	211	6,794	7,026	88	—	554	—	4	2,596	3,242	10,268		2,258,644

Eighteen fatal accidents have occurred, causing the deaths of 19 work-persons. All these have taken place in the iron ore mines of Cumberland and North Lancashire. To compare with last year, I have extracted from my predecessor's list the number of accidents and deaths which took place, and find they numbered 25, so that the year under notice compares very favourably with 1874, the production of minerals in the two counties being about the same as in that year.

The accidents are thus classified:

Underground.

Falls of ground	8	causing 8	deaths
Ropes and chains breaking	1	„ 2	„
Falling from part way down	2	„ 2	„
Things falling from part way down	1	„ 1	„
Miscellaneous in shafts	3	„ 3	„
Explosions of gunpowder or other explosives	2	„ 2	„
Suffocation by gases	1	„ 1	„
	18		19

In addition to the notices of fatal accident which I have received, notices concerning 22 instances of personal injury have come to hand, classified as follows:

Underground.

Falls of ground	8	causing injury to 8	persons
Falling from part way down	1	„ 1	„
Miscellaneous in shafts	2	„ 2	„
Explosions of gunpowder, &c.	4	„ 4	„
Sundries underground	5	„ 5	„
	20		20

Surface.

By machinery	1	„	1
Miscellaneous	1	„	1
	2		2
	22		22

In the following list of accidents, under the head of "Cause of Death, and Remarks," I have endeavoured to show the circumstances connected with each fatality sufficiently in detail to render it unnecessary for my enlarging on each case here. My predecessor in his valuable Report of last year having made very important suggestions and drawn general conclusions worthy of grave attention, I think it better to forbear making any lengthy report until I have opportunity of becoming more familiar with the district, and its various modes of working and requirements. I am satisfied, however, from my present knowledge of the district, and judging from the evidence given at inquests which I have attended, and inspections and inquiries relating to many of the accidents which have occurred since I took charge of the district, that a remark made by my predecessor in last year's Report concerning the class of accidents caused by "falls of ground," is applicable to all classes of accidents, and is especially worthy of being repeated. He says "the only remedy" (speaking of the prevention of accidents), "lies in increased efficiency in the management of mines, the establishment of strict discipline "among the sub-agents and men, and a thorough appreciation of that important principle "which should ever be present to the mind of a mine agent, namely, that motives of economy "ought never to be entertained where circumstances arise which render danger to life or limb "even remotely possible."

The following is the list of accidents above referred to:

LIST of the FATAL ACCIDENTS, and LOSS of LIFE arising therefrom, in MR. WILLIS'S DISTRICT, comprising the COUNTIES of CUMBERLAND and NORTHUMBERLAND, and the detached part of the COUNTY of LANCASHIRE, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above ground.	Total.
1875.														
Jan. 2	1	Old Hills	Furness	Barrow Hæmatite Steel Co.	Albert Condy	Miner	35	A stone falling from a bucket	–	–	–	1	–	1
„ 11	2	Park	Ditto	Ditto	Stephen Askew	Ditto	33	Falling down a "rise" in which he was working. He had fired a hole, and was preparing to descend into a place of safety, when, it is supposed, his candle went out, and that he, having got confused, made a false step in trying to find the ladder.	–	–	–	1	–	1
„ 18	3	Hodbarrow	Cumberland	Hodbarrow Mining Co.	John Peart	Ditto	22	The explosion of a charge of dynamite, caused by the careless handling of the explosive by the deceased and his comrade.	–	–	–	1	–	1
Feb. 20	4	Parkside	Ditto	Parkside Mining Co.	John Quayle	Ditto	21	While descending the shaft in the dark, the deceased slipped off the cage before it had come to rest, and fell away to the bottom, a distance of about 40 feet.	–	–	1	–	–	1
„ 25	5	Eskett	Ditto	Eskett Iron Ore Co.	John Pool	Ditto	30	The falling of a mass of ore from the roof of the drift in which he was working. The drift was timbered all through, and was supposed to be perfectly safe.	–	1	–	–	–	1
May 27	6	Hodbarrow	Ditto	Hodbarrow Mining Co.	Geo. Stanberry	Ditto	38	The giving way of a piece of timber in the forebreast in which he was working.	–	1	–	–	–	1

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List of Fatal Accidents—*continued*.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	Number of Lives lost.					
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above ground.	Total.
1875.														
May 30	7	Eskett - -	Cumberland -	Eskett Iron Ore Co. -	Lewis Hale -	Banksman -	30	The explosion of some dynamite which had been left under the bench in the "eye" in which the deceased was working. He was alone at the time, and no evidence could be obtained as to the cause of the explosion. Several witnesses at the inquest deposed to there being no detonators with the dynamite.	–	–	–	1	–	1
June 4	8	Montreal -	Ditto -	John Stirling - -	Daniel Conway -	Labourer -	18	The falling of some ground in a drift as the deceased, accompanied by some other men, were passing along a drift. There was no regular thoroughfare through this part of the mine, and the presence of the men at this place was altogether unnecessary, but the agents had not prohibited them going that way to and from their work.	–	1	–	–	–	1
„ „	9	Parkside -	Ditto -	Parkside Mining Co. -	Thomas Connor -	Miner -	42	A piece of shale fell upon him in his working place, killing him instantaneously.	–	1	–	–	–	1
„ 16	10	Dalton - -	Furness -	Denney Bros. & Co. -	Thomas Kennedy -	Ditto -	49	The breaking of a steel wire rope while they were descending in a kibble. They were going by this mode contrary to the regulations of the mine, which were posted up in large print at the mouth of the shaft. A good ladderway was duly provided for their use, but they went down by the kibble in order to save the slight labour of travelling over the ladders.	–	–	2	–	–	2
					Thomas Baily -	Ditto -	33							

List of Fatal Accidents—*continued.*

Date	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed age.	Cause of Death, and Remarks.	Number of Lives Lost.					
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous underground.	Above ground.	Totals.
1875.														
June 17	11	Crossgill -	Cumberland -	James Wagstaffe Smith -	Henry Richards -	Miner -	25	A fall of ore from the roof of his working place.	–	1	–	–	–	1
Aug. 19	12	Woodend -	Ditto - -	James Bain & Co. -	Peter McVoy -	Ditto -	26	Fall of ore (off a clay back) from forebreast of working place.	–	1	–	–	–	1
Sept. 3	13	Jack Trees -	Ditto - -	S. and I. Tindow -	- - -	- - -	—	Jumping into the cage when in motion in order to get up the shaft whilst the shots were being fired, and overbalancing himself was caught by the roof of the top eye and crushed.	–	–	1	–	–	1
Oct. 11	14	Tindal Moor -	Lancashire -	Furness Iron and Steel Co.	Wm. High -	Underground captain.	48	Deceased went into the bottom of a sinking shaft, and was suffocated either by carbonic acid gas or the fumes resulting from the explosion of dynamite.	–	–	–	1	–	1
„ 21	15	Salter, No. 1 Pit	Cumberland -	Salter and Eskett Park Mining Co.	John Twigg -	Miner -	—	While in an abandoned working, where he should not have been, seeking stemming a piece of ore fell on him.	–	1	–	–	–	1
Dec. 6	16	Crossfield -	Ditto - -	Crossfield Iron Ore Co. -	James Hodgson -	Ditto -	52	Contrary to the regulations of the mine, deceased was crossing the shaft at a point 12 fathoms from the surface, when the cage caught him and he fell to the bottom.	–	–	1	–	–	1
„ 16	17	Cleator -	Ditto -	Cleator Iron Ore Co. -	William Foss -	- - -	—	Deceased and another man was descending the shaft. The drum of the winding engine had not been made fast to the drum shaft, and the cage ran "amain" and capsized itself, crushing deceased against the side of the pit.	–	–	1	–	–	1
„ 16	18	Salter, No. 8 Pit	Ditto - -	Salter and Eskett Park Mining Co.	Thomas Graham -	- - -	—	Fall of ore - - -	–	1	–	–	–	1
								Totals - -	—	8	6	5	—	19

The number of persons employed per fatal accident is 570, and per life lost 540, calculated upon the persons employed both above and underground. If we take it upon the persons employed underground only, as all the accidents occured underground, the figures stand thus, persons employed per fatal accident 390, per life lost 370.

The following is a list of the mines in this district.

LIST of MINES classed under the METALLIFEROUS MINES REGULATION ACT, in Mr. JAMES WILLIS'S District 1875–6.

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Remarks.
CUMBERLAND—LEAD, COPPER, ZINC, BARYTES, AND PLUMBAGO MINES.			
Alston Moor Mining Co., Alston	Benty Field	Alston	Lead.
	Grassfield	Ditto	Zinc.
	Nentsberry	Ditto	Lead and Zinc.
Ayle Burn Mining Co., Alston	Ayle Burn	Ditto	Ditto.
Bell, C. W. & W. M., Crossfell Mine, Kirkland.	Crossfell	Kirkland	Ditto.
Blagill Mine Co., Alston	Blagill	Alston	Ditto and Barytes.
Borrowdale Plumbago & Lead Mining Co., Ulverston, Lancashire.	Borrowdale	Borrowdale	Plumbago and Lead.
Brownley Hill Mining Co., Alston.	Brownley Hill	Alston	Lead.
Bulman Hills Mining Co., Alston.	Bulman Hills	Ditto	Ditto.
Caldbeck Fells Consolidated Lead and Copper Mining Co., Caldbeck.	Caldbeck	Caldbeck	Copper and Lead.
Calvert Mine Co., Alston	Calvert	Alston	Lead.
Carruthers, J., & Co., Dowpotsyke, &c., Mines, Alston.	Dowpot, Syke, and Gattergill.		Ditto.
	Green Banks	Ditto	Ditto.
De Mey, Dr., & Co., Dowkeburn, &c., Mines, Alston.	Dowkeburn & Cashwell.	Ditto	Ditto.
	Patter Syke	Ditto	Ditto.
Dowgang Mine Co., Nenthead	Dowgang	Nenthead	Ditto.
Force Cragg Mining Co., Braithwaite, Keswick.	Force Cragg	Keswick	Barytes.
Griffitn, D. G., Holyfield & Natrass Mine, Alston.	Holyfield and Natrass	Alston	Lead.
Hutchinson, Messrs., & Co. Carrock Fell, Caldbeck.	Brandy Gill	Caldbeck	Ditto.
Keswick United Silver Lead Mine Co., Thornthwaite, Keswick.	Ladstock	Keswick	Ditto.
	Rachel Wood	Ditto	Ditto.
	Thornthwaite	Ditto	Ditto.
	Beckstone	Ditto	Ditto.
London Lead Co., Nenthead	Garrigill	Nenthead	Ditto.
	Gilderdale & Whitley	Ditto	Ditto.
	Nenthead	Ditto	Ditto and Zinc.
Masser, J. F., Gallygill Syke and Bents Mine, Alston.	Gallygill Syke & Bents.	Alston	Ditto.
Saddleback Mining Co., Threkeld, Keswick.	Saddleback	Keswick	Ditto.
Spark, H. K., Newlands, Keswick	Yewthwaite	Ditto	Ditto.
Walton, J. P., & Co., Dosey Mine, Alston.	Dosey	Alston	Abandoned.
White, Austin, & Hagan, Tynehead Mine, Alston.	Tynehead or Sir John's	Ditto	Copper.
Wilson, Messrs., & Co., Rodderup Fell Mines, Alston.	Rodderup Fell	Ditto	Lead
CUMBERLAND—IRON ORE MINES.			
Bain, James, and Co., Frizington and Woodend Mines, Cleator Lane End, Whitehaven.	Frizington	Cleator Moor	Iron Ore.
	Woodend	Ditto	Ditto.
Baird, Wm., and Co., Lamplugh, Cockermouth.	Kelton and Knockmarton.	Lamplugh	Ditto.
Boundy and Co., Lamplugh, Cockermouth.	Ennerdale and Kelton Fells.	Ditto	Ditto.
Cleator Iron Ore Co., Cleator, Carnforth.	Cleator	Cleator Moor	Ditto.

List of Mines classed under the Metalliferous Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Remarks.
	CUMBERLAND IRON ORE MINES—*continued.*		
Crossfield Iron Ore Co., Crossfield, Cleator Moor.	Crossfield	Cleator Moor	Iron Ore.
Dalmellington Iron Co., Frizington, Carnforth.	Holebeck	Ditto	Ditto.
Ehen Mining Co., Egremont	Ehen	Egremont	Ditto (sinking).
Eskett Iron Ore Co., Eskett, Whitehaven.	Eskett	Eskett	Ditto.
Fearon, Jos., Frizington, Carnforth.	Birks	Frizington	Ditto.
Fletcher and Hodgetts, Frizington, Carnforth.	High House	Ditto	Ditto.
Hodbarrow Mining Co., Holborn Hill, Cumberland.	Hodbarrow	Holborn Hill	Ditto.
Leaconfield, Lord, Bigrigg, and Cleator Moor Mines, Cleator Lane End, Carnforth.	Bigrigg and Cleator Moor.	Cleator Moor	Ditto.
Lindow, S. and J., Frizington, Carnforth.	Lonsdale, Sir John	Frizington	Ditto.
	Fletcher Meadow, and Jack Trees.	Cleator Moor	Ditto.
Maryport Hæmatite Iron Co., Winder, Carnforth.	Windergill	Winder	Ditto.
Moor Row Mining Co., Moor Row, Whitehaven.	Moor Row	Moor Row	Ditto.
New Parkside Mining Co., Frizington, Carnforth.	New Parkside	Frizington	Ditto.
Parkside Mining Co., Cleator, Carnforth.	Parkside	Ditto	Ditto.
Salter and Eskett Park Mining Co., Salter and Eskett, Whitehaven.	Salter and Eskett Park	Salter and Eskett	Ditto.
Scalelands Mining Co., Frizington, Carnforth.	Scalelands	Frizington	Ditto.
Smith, S. W., Crossgill Mines, Frizington, Carnforth.	Crossgill	Ditto	Ditto.
Stirling, J., Montreal Mines, Whitehaven.	Montreal	Whitehaven	Ditto.
Whitehaven Iron Mines Co., Eskdale, Whitehaven.	Eskdale	Eskdale	Ditto.
Winder Iron Ore Co., Frizington, Carnforth.	Winder	Frizington	Ditto.
	LANCASHIRE—COPPER MINES.		
Coniston and Tilberthwaite Mining Co., Windermere.	Coniston	Windermere	Copper.
	Tilberthwaite	Ditto	Ditto.
McGowan and Cooper, Elterwater, Ambleside.	Great Coniston	Elterwater	Ditto.

List of Mines classed under the Metalliferous Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Remarks.
LANCASHIRE—IRON ORE MINES.			
Aldingham Hæmatite Mining Co., 61, Lowther Street, Whitehaven.	Aldingham - -	Ulverston - -	Boring to prove royalty.
Ashburner, G. B., Trustees of late, Elliscales Mines, Dalton-in-Furness.	Elliscales - -	Dalton-in-Furness -	Iron Ore.
Askam Mines, Dalton-in-Furness	Dalton - -	Ditto - -	Ditto.
	Goldmire - -	Ditto - -	Ditto.
	Tindal Moor -	Ulverston - -	Ditto.
	Martin - -	Ditto - -	Ditto.
	Thwaite Flatt -	Dalton-in-Furness -	Ditto.
Barrow Hæmatite Steel Co., Barrow.	Monzell - -	Ditto - -	Ditto.
	Newton - -	Ditto - -	Ditto.
	Old Hills - -	Ditto - -	Ditto.
	Park - -	Ditto - -	Ditto.
	Stainton - -	Ditto - -	Ditto.
	Stank - -	Ditto - -	Ditto.
	Whitriggs - -	Ditto - -	Ditto.
Brogden, J., & Co., Stainton Mines, Ulverston.	Stainton - -	Stainton - -	Ditto.
Buccleuch, Duke of, Longlands Mine, Dalton-in-Furness.	Longlands - -	Dalton-in-Furness -	Ditto.
Carnforth Iron Co., Dunnerdale Mine, Dunnordale.	Dunnerdale -	Dunnerdale - -	Ditto.
Denney Bros. & Co., Ulverston	Dalton - -	Dalton-in-Furness -	Ditto.
Furness Iron & Steel Co., Askam, Dalton-in-Furness.	Askam - -	Ditto - -	Ditto.
Green Haume Hæmatite Co., Barrow-in-Furness.	Green Haume -	Ditto - -	Ditto.
Harrison, Ainslie, & Co., Lindal Moor, Ulverston.	Lindal Moor -	Ulverston - -	Ditto.
Highfield Hæmatite Iron Ore Co., Dalton-in-Furness.	Highfield - -	Dalton-in-Furness -	Ditto.
Kennedy Bros., Roanhead, Dalton-in-Furness.	Roanhead and Askham	Ditto - -	Ditto.
Lindal & Ousby Iron Ore Co., Little Urswick, Ulverston.	Lindal and Ousby -	Ulverston - -	Ditto.
Parkside Mining Co., Whitehaven.	Pennington -	Ditto - -	Ditto.
	Urswick - -	Ditto - -	Ditto.
Solway Hæmatite Iron Co., Maryport.	Moot Hall -	Ditto - -	Ditto.
Ulverston Mining Co., Ulverston.	Lindal Cote -	Dalton-in-Furness -	Ditto.
Yarlside Mining Co., Barrow-in-Furness.	Parkhouse - -	Ditto - -	Ditto.
NORTHUMBERLAND—LEAD, BARYTES, AND WHINSTONE MINES.			
Bewick and Partners, Langley Barony Mines, Haydon Bridge.	Langley Barony -	Haydon Bridge -	Lead and Whinstone.
Buck, R. R., & Co., Morley Fell Mine, Haydon Bridge.	Morley Fell -	Ditto - -	Lead.

List of Mines classed under the Metalliferous Mines Regulation Act, &c.—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Remarks.
NORTHUMBERLAND LEAD, BARYTES, AND WHINSTONE MINES—*continued.*			
Hall, Matilda, Settling Stones Mine, Hexham.	Settling Stones -	Hexham - -	Barytes.
Stonecroft & Greyside Mining Co., Stonecroft, Hexham.	Stonecroft and Greyside.	Ditto - -	Lead.
Thornbrough Mine Co., Thornbrough, Corbridge.	Thornbrough -	Corbridge.	
Walton & Cowper, Fallowfield Mine, Acomb, Hexham.	Fallowfield -	Hexham - -	Lead and Barytes.
Water House Mining Co., Haydon Bridge.	Waterhouse -	Haydon Bridge.	

I have, &c.,
JAMES WILLIS,
Inspector of Mines.

To the Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

Mr. Wardell's Report.

Report on the Working of the Coal Mines Regulation Act, 1872 (35 & 36 Vict. c. 76), in the Yorkshire and Lincolnshire District, during the Year ended 31st December 1875.—By Frank N. Wardell, Esq., F.G.S.

Wath, Rotherham,
March 1876.

Sir,

I have the honour to present to you my Annual Report, as Inspector of Mines, for the Yorkshire and Lincolnshire District.

It is much to be regretted that, owing to the terrible explosion of firedamp at Swaithe Main Colliery in December, the number of lives lost in this district during 1875 is extraordinarily high. Other explosions contributed to swell the total loss of life under this head to 162, and this number, added to 105 deaths from other causes, gives a gross total of 267 deaths in the year.

The 162 lives lost by explosion resulted from six separate accidents, a total of individual accidents bearing favourable comparison with the average of previous years. In 1870 there were nine accidents from the same cause; in 1871, seven; in 1872, nine; in 1873, seven; and in 1874, seven. Yet, owing as I have stated to the magnitude of the Swaithe Main Colliery disaster, the number of deaths caused by the six accidents in 1875 exceeds by 54 the sum total of the five previous years. I abstain from dilating upon this fearful loss of life from explosion at present, as I purpose entering into the details of these accidents later on, and I have also, in accordance with your instructions, reported to you specially with reference to the explosion at Swaithe Colliery.

The loss of life from falls of roof and sides last year amounted to 62, caused by 61 separate accidents. This total, as compared with 49 in the previous year, is also much in excess. From nine accidents in shafts 11 deaths resulted, being three more than in 1874.

Under the head of "Miscellaneous Accidents Underground," 18 accidents caused 21 deaths. This is more than double the number in the preceding year, and forms a very serious item in the list. An explosion of gunpowder in an ironstone mine, resulting in the deaths of four persons, is included in this account.

On the surface 11 persons were killed, an improvement of four as compared with 1874. These deaths were the result of 11 separate accidents. Summing up, therefore, 105 separate accidents produced 267 deaths.

An explosion at Swaithe Colliery killed 143. One at Aldwarke Main resulted in the deaths of seven. Six were killed by an explosion at Methley Junction Pit, Whitwood. Four died from the same cause at Mirfield. An explosion of gunpowder at the Crosses Pit, Bowling, caused the deaths of four persons. Two men were killed in a sinking shaft at Woodhouse Junction. Two others by being lowered into the sump at Glass Houghton Colliery; and a fall of roof caused the deaths of two persons at Darton Hall Colliery. The remaining 97 accidents resulted in each instance in the death of one person.

Notwithstanding the fact that owing to strikes and other causes, many of the collieries in this district did not work anything like full time during the year, the mineral produced was very considerably in excess of that in 1874. The amount of coal raised was 15,855,990 tons, whereas in 1874 it was 14,827,313 tons, an increase of 1,028,677 tons in 1875. There must be added also 183,961 tons of fire-clay, and 355,552 tons of ironstone, making a gross total of 16,395,503 tons of mineral wrought as against 15,221,909 tons in the previous year, thus showing an increase of 1,173,594 tons.

There were 62,459 persons employed in the production of this amount which gives a proportion of 262 tons to each person employed. The number of persons engaged in this district in 1874 and 1875 was almost the same in each year, there being an increase of 60 only in the latter.

The amount of mineral raised in this district during 1874 was 15,221,909 tons, and the number of lives lost 112, or a proportion of one death to every 135,910 tons raised. The total amount produced in the kingdom in the same period was 140,713,832 tons, and the number of lives lost 1,056, or a proportion of one death to every 133,251 tons raised.

In 1875 the amount of mineral raised in this district was 16,395,503 tons, and the number of lives lost 267, or a proportion of one death to every 61,406 tons raised. The total amount produced in the kingdom during the same period was 147,700,313 tons, and the number of lives lost 1,244, or a proportion of one death to every 118,730 tons raised.

In the eight years ended 31st December 1875, 277 persons lost their lives in this district by explosion of firedamp, out of a total of 950, or 29 per cent. In the same period 371 were killed by falls of coal and roof, or 39 per cent., and it must be borne in mind, when considering these proportions, that in the former case large numbers were killed by one or two accidents, whilst in the latter, as a rule, each death was the result of a separate accident.

The following table of statistics is interesting :—

Total number of mines in the kingdom	4,051
Average „ „ for each district	338
Actual „ „ in Yorkshire and Lincolnshire	530
Total number of persons employed in mines in the kingdom	535,845
Average „ „ „ for each district	44,654
Actual „ „ „ Yorkshire and Lincolnshire	62,459
Total amount of mineral produced in the kingdom	147,700,313
Average „ „ „ for each district	12,308,359
Actual „ „ „ in Yorkshire and Lincolnshire	16,395,503

SUMMARY of separate Colliery Accidents in the Yorkshire and Lincolnshire District during the year ended 31st December 1875.

Explosion of firedamp	6
Falls of roof and sides	61
In shafts	9
Miscellaneous underground	18
On the surface	11
Total	105

SUMMARY of lives lost in the above Accidents.

Explosion of firedamp	162
Falls of roof and sides	62
In shafts	11
Miscellaneous underground	21
On the surface	11
Total	267

DEATHS from Shaft Accidents.

Falling into shaft from surface	1
Falling from part way down	3
Things falling from part way down	1
Trunk lowered onto him in sinking shaft	1
Fell from trunk in sinking shaft, and a shot exploded on their reaching the bottom	2
Crushed by cage at bottom of shaft	1
Lowered into sump	2
Total	11

MISCELLANEOUS UNDERGROUND.

Explosion of gunpowder	4
Suffocation by gases	1
On inclined planes	10
By trams and tubs	5
Kicked by a horse	1
Total	21

On the Surface.

Run over and crushed by waggons	6
Fell into hopper	1
Fell off steam hoist	1
Fell from chimney, owing to breaking of rope	1
Struck by head-gear, which slipped while being raised	1
Fell off pit hill	1
Total	11

Monthly Statement of Deaths caused by Accidents in the Mines of the Yorkshire and Lincolnshire District during the Year 1875.

Month.	Explosions.	Falls of Roof and Sides.	In Shafts.	Miscellaneous.	Above Ground.	Total.
January	7	6	1	3	—	17
February	—	9	2	—	2	13
March	—	4	—	1	2	7
April	—	8	1	2	—	11
May	—	2	1	1	—	4
June	1	7	—	7	—	15
July	4	2	2	1	3	12
August	1	5	—	1	1	8
September	—	6	—	—	—	6
October	—	5	1	1	1	8
November	—	4	2	2	1	9
December	149	4	1	2	1	157
Total	162	62	11	21	11	267

List of Collieries where Fatal Accidents have occurred in the years 1868 to 1875 inclusive.

Owner's Name.	Name of Colliery.	Deaths.								
		1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Earl Fitzwilliam	Elsecar Collieries	2	1	1	2	3	2	—	—	11
John Brown and Co.	Aldwarke Main	1	—	1	2	3	3	4	9	30
	Car House	2	1	1	3					
T. M. Carter and Co.	Allerton Bywater	2	1	—	—	1	—	—	—	4
Farnley Iron Co.	Farnley	3	—	—	—	1	2	—	—	6
Newton, Chambers, and Co.	Thorncliffe	1	1	4	4	2	3	2	3	20
Cliffe Coal and Fire Clay Co.	Hollingthorpe	1	—	1	—	1	—	—	—	3
Lundhill Coal Co.	Lundhill	1	—	2	1	4	1	1	2	12
Jeffcock and Dunn	Carbrook	1	1	—	—	—	—	—	—	2
J. and J. Charlesworth's Collieries		6	2	—	4	2	5	26	3	48
Isaac Wood and Son	Dean Lane and Harrop Edge	1	—	—	1	1	—	—	—	3
Sturges and Co.	New Gawber Hall	1	1	—	—	—	1	—	—	3
R. M. and Holmes Co.	Holmes	3	1	3	3	1	1	1	3	16
Thrybergh Hall Co.	Thrybergh Hall	1	—	—	—	—	—	—	—	1
B. Huntsman	Tinsley Park	3	4	5	1	—	—	2	4	19
Hird, Dawson, and Hardy	Low Moor	2	2	—	1	2	5	3	1	16
D. Wroe and Co.	Heckmondwike	2	—	—	1	—	—	—	—	3
	Waterloo									
New Sharlston Coal Co.	Sharlston	1	1	—	2	1	2	1	—	8
Fence Coal Co.	Fence	1	—	2	2	1	1	—	3	10
	Orgreave									
Greenhough and Co.	Adwalton	1	—	—	—	—	—	—	—	1
Charles Winn	Nostell	1	—	—	1	—	—	—	—	2
Monk Bretton Coal Co.	Monk Bretton	1	—	1	1	1	1	1	—	6
J. and J. Haigh	Victoria, Morley	1	—	2	—	—	—	—	—	3
Pope and Pearson	West Riding and Silkstone	1	2	1	1	4	4	—	2	15
Wombwell Main Co.	Wombwell Main	2	2	3	3	1	—	2	—	13
W. Ingham and Sons	Wortley	1	—	—	—	—	—	—	—	1

List of Collieries where Fatal Accidents have taken place—*continued.*

Owner's Name.	Name of Colliery.	Deaths.								
		1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Mitchell and Co.	Swaithe Main	1	1	1	1	2	1	3	146	158
	Edmund's Main	—	—	1	1					
	Mitchell Main	—	—	—	—					
R. Hudson and Co.	Stanley	2	2	—	1	—	2	2	6	15
Silkstone Fall Co.	Silkstone Fall	1	1	—	—	—	—	—	—	2
Joshua Bower and Sons	Allerton	3	—	—	—	3	1	1	—	8
Manston Coal Co.	Manston	2	2	—	1	1	1	—	—	7
Kiveton Park Coal Co.	Kiveton Park	1	1	—	2	3	1	3	2	13
Leather and Littlewood	Ellis Laith	1	—	—	—	—	—	—	—	1
Skinner and Holford	Waleswood	1	—	2	2	3	—	1	2	11
Bowling Iron Co.	Bowling	2	1	3	—	—	—	1	5	12
H. Briggs, Son, and Co.	Whitwood	1	—	2	—	2	6	3	10	24
A. Harding and Co.	Beeston Manor	1	1	—	—	1	—	—	—	3
J. Jackson	Great Gomersal	1	—	—	—	—	—	—	—	1
J. T. Leather	Waterloo Main	1	1	1	—	—	1	1	—	5
W. Ackroyd and Bros.	Morley Main	1	—	—	—	36	—	—	—	37
G. and J. Haigh	Ravensthorpe									
	Alverthorpe	2	—	1	1	1	1	1	2	9
	Dewsbury Moor									
Wharncliffe Silkstone Co.	Wharncliffe Silkstone	1	1	1	—	1	1	1	—	6
West Yorkshire Iron and Coal Co.	West Ardsley	1	1	1	1	1	1	2	3	11
E. Sutcliffe and Co.	Victoria	1	—	—	—	—	1	—	—	2
J. Baistow	Norwood Green	1	—	—	—	—	—	—	—	1
Blacker Main Co.	Blacker Main	2	1	2	—	1	—	1	1	8
G. Bailey	St. John's	1	—	—	1	—	—	1	—	3
Samuel Fox and Co.	Stocksbridge	1	—	—	—	1	—	—	—	2
Woolley Coal Co.	Woolley	1	3	2	2	—	4	1	—	13
Inspectors of Hoyland and Elsecar	Hoyland and Elsecar	1	—	—	1	1	—	—	1	4
Howley Park Co.	Howley Park	1	—	—	—	—	—	—	—	1
Locke and Co.	St. John's	1	—	3	1	2	—	3	2	12
	Kippax									
Staveley Coal and Iron Co.	North Staveley	1	—	—	—	1	1	—	1	4
Garforth Coal Co.	Garforth	1	1	—	1	—	2	—	—	5
Asquith Bros.	Howden Clough	1	—	—	—	1	1	—	—	3
W. Day	Mount Osborne	1	2	5	2	4	2	3	2	21
J. Rhodes	Woodthorpe	—	1	1	—	—	1	—	—	3
Pitsmoor Coal Co.	Brightside	—	2	1	—	—	5	—	2	10
G. A. Haworth and Co.	Silkstone Main	—	1	—	—	—	3	1	2	7
Norwegian Titanic Co.	Neville Hill	—	1	—	—	—	—	1	—	2
Firth, Barber, and Co.	Oaks	—	2	2	3	1	5	4	4	21
R. C. Clarke	Old Silkstone	—	1	—	—	—	—	2	1	4
Thorp's Gawber Hall Co.	Thorp's Gawber Hall	—	1	1	1	—	3	1	5	12
Darfield Main Co.	Darfield Main	—	3	3	1	2	1	1	4	15
Wheldale Coal Co.	Wheldale	—	1	—	2	—	2	2	3	10
R. Craik and Co.	East Gawber Hall	—	2	2	1	1	5	3	1	15
Seth, Senior, and Sons	Box Ings	—	1	—	—	—	—	—	—	1
Lodge, Webster, and Scott	Healey	—	1	—	—	—	—	—	—	1
G. Watkinson and Sons	Darton	—	1	—	—	—	—	—	—	1
Townend Bros.	Denholm	—	1	—	—	—	—	—	—	1
Denaby Main Co.	Denaby Main	—	3	4	2	5	1	2	—	17
Rhodes and Dalby	Snydale									
	Sykes	—	2	4	1	5	—	—	—	12
	Prince of Wales									
John Holmes	Churwell	—	1	—	—	—	—	—	—	1
Manvers Main Co.	Manvers Main	—	2	—	1	1	2	—	2	8
Stansfeld and Co.	Flockton	—	2	—	—	—	—	—	1	3
Haynes and Co.	Hall Royd	—	1	1	—	—	—	—	2	4
Strafford Main Co.	Strafford Main	—	—	1	1	1	—	—	1	4
Hargreaves and Naylor	Whinney Moor	—	—	1	—	—	—	—	—	1
Chas. Wheatley	Bradley Wood	—	—	1	—	—	—	—	—	1
Hepworth Iron Co.	Wood	—	—	1	—	—	—	—	—	1
John Cawthera	Four Lane Ends	—	—	2	—	—	—	—	—	2
W. Wood	Foxholes	—	—	2	—	—	—	—	—	2
J. Marsland	Providence	—	—	1	—	—	—	—	—	1
Messrs. Greaves	White Hill	—	—	1	—	—	—	—	—	1
E. Heeley	Lane End	—	—	1	—	—	—	—	—	1
Chickenly Heath Co.	Chickenly Heath	—	—	1	—	—	—	—	—	1
Cooper, Sellars, and Co.	Roundwood	—	—	1	—	—	—	—	—	1
J. C. Ingham	Thornhill	—	—	1	2	—	1	—	—	4
Cooper and Co.	Worsbro' Park	—	—	1	—	4	—	—	—	5
Sellars and Co.	Greasbro'	—	—	1	—	—	—	—	—	1

List of Collieries where Fatal Accidents have taken place—*continued.*

Owner's Name.	Name of Colliery.	Deaths.								
		1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total
York Road Coal and Iron Co.	Killingbeck	—	—	1	2	—	1	1	1	6
J. Sheard	Gregory Spring	—	—	1	—	—	—	—	1	2
W. Horn	West Scrafton	—	—	1	—	—	—	—	—	1
Middleton Coal Co.	Middleton	—	—	—	1	—	—	3	—	4
Trustees of H. Ellis	Kirkstyles	—	—	—	1	—	—	—	—	1
Marriott Brothers	Mirfield Moor	—	—	—	1	—	—	—	—	1
W. Ward	Churwell	—	—	—	1	—	—	—	—	1
Featherstone Main Co.	Featherstone Main	—	—	—	2	3	—	—	2	7
Crawshaw and Blakeley	Savile	—	—	—	1	—	1	—	—	2
High Stile Coal Co.	High Stile	—	—	—	1	—	—	2	—	3
Park Coal Co.	Liversedge	—	—	—	1	—	—	1	1	3
Hall and Stones	High Royd	—	—	—	1	—	1	—	1	3
Johnson and Co.	West Pit	—	—	—	1	—	—	—	—	1
G. Chambers and Son	Grange	—	—	—	2	1	—	1	—	4
T. A. Mann and Co.	Rockley	—	—	—	1	—	—	—	—	1
Duke of Norfolk	Nunnery	—	—	—	2	5	7	3	1	18
Bedford and Co.	Dean Hall	—	—	—	—	1	—	1	—	2
Micklefield Coal Co.	Micklefield	—	—	—	—	1	—	—	—	1
Swan Bank Coal Co.	Swan Bank	—	—	—	—	1	—	—	—	1
E. J. W. Waterhouse	Chevet	—	—	—	—	1	—	—	1	2
Messrs. Harrison	Birkhill	—	—	—	—	1	—	—	—	1
Stanley Coal Co.	Liversedge	—	—	—	—	1	1	—	—	2
Ellison and Broadbent	Whitwell Main	—	—	—	—	1	—	—	—	1
Wilks and Co.	Glass Houghton	—	—	—	—	1	—	—	2	3
J. Denton and Co.	Grimesthorpe	—	—	—	—	1	—	—	—	1
Grosvenor and Son	New Hall	—	—	—	—	1	—	—	—	1
Woodlesford and Waterloo Co.	Woodlesford	—	—	—	—	—	1	—	—	1
J. H. Garbutt	Newton Main	—	—	—	—	—	2	—	—	2
T. H. Robinson	Leeds	—	—	—	—	—	1	—	—	1
Darley Main Co.	Pindar Oaks	—	—	—	—	—	1	—	—	1
J. Helliwell	Deepcar	—	—	—	—	—	1	—	—	1
Newhill Coal Co.	Newhill	—	—	—	—	—	1	—	—	1
W. Parkin and Sons	Robertown	—	—	—	—	—	1	—	—	1
W. Bracewell	Ingleton	—	—	—	—	—	1	1	—	2
Silkstone and Dodworth Coal and Iron Co.	Dodworth	—	—	—	—	—	3	—	—	3
B. Lockwood	Shuttle Eye	—	—	—	—	—	1	—	—	1
W. Lambert	Threshfield	—	—	—	—	—	2	—	—	2
J. Critchley	Batley	—	—	—	—	—	1	—	—	1
W. H. Stone	Aston Main	—	—	—	—	—	1	—	—	1
Fryston Coal Co.	Fryston	—	—	—	—	—	—	1	1	2
John Tordoff	Wibsey Bank Foot	—	—	—	—	—	—	1	—	1
Bastow and Crossley	White Lee	—	—	—	—	—	—	1	—	1
W. Parkin and Sons	Fall Lane	—	—	—	—	—	—	1	—	1
Rhodes, Wright, and Wroe	Park Farm	—	—	—	—	—	—	1	—	1
C. Marsden and Sons	Smithies	—	—	—	—	—	—	1	—	1
Wharncliffe Woodmoor Coal Co.	Wharncliffe Woodmoor	—	—	—	—	—	—	1	—	1
John Crowley and Co.	Wincobank	—	—	—	—	—	—	2	—	2
E. Lockwood	Woodwell	—	—	—	—	—	—	1	—	1
Airedale Brick and Tube Co.	Shipley	—	—	—	—	—	—	1	—	1
E. Brooke & Sons	Stile Common	—	—	—	—	—	—	—	1	1
Grayson, Lowood, & Co.	Lowood's Wharncliffe	—	—	—	—	—	—	—	1	1
T. C. Taylor & Co.	Gomersal Main	—	—	—	—	—	—	—	1	1
J. Haigh & Sons	Snowgate Head	—	—	—	—	—	—	—	1	1
J. & W. Woodhead	Manor	—	—	—	—	—	—	—	2	2
Crossland Coal Co.	Scholes	—	—	—	—	—	—	—	1	1
Wheatley, Nevin, & Barrowclough	Mirfield	—	—	—	—	—	—	—	4	4
Industrial Coal & Iron Co.	Woodhouse Junction	—	—	—	—	—	—	—	2	2
Leathly, Bailey, and Dixon	Andrew Hill	—	—	—	—	—	—	—	1	1
Doles and Lumb Wood Co.	Doleswood	—	—	—	—	—	—	—	1	1
	Total Deaths	80	69	90	84	133	115	112	267	950

CAR HOUSE & ALDWARKE MAIN COLLIERY.

FRANK N. WARDELL.

SCALE 2 CHAINS TO AN INCH.

The following TABLE shows the DEATHS arising from VARIOUS CAUSES during the last eight years.

Nature of Accident.	Deaths.								
	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Explosion of firedamp - -	6	1	11	10	45	12	30	162	277
Falls of roof and sides - -	36	41	46	42	43	52	49	62	371
In shafts - - - - -	11	7	14	13	14	18	8	11	96
Miscellaneous underground - -	13	15	14	12	28	15	10	21	128
Above ground - - - -	14	5	5	7	3	18	15	11	78
Totals of lives lost -	80	69	90	84	133	115	112	267	950
Totals of accidents -	77	62	83	80	96	105	88	105	696

The first loss of life in the district through explosion of firedamp in the year 1875 occurred at the Aldwarke Main Colliery, near Rotherham, the property of Messrs. John Brown and Co., on 5th January. In this case, I regret to say, seven persons were killed. The following extract from the newspaper report of the inquest held by D. Wightman, Esq., coroner, containing the chief points of the evidence, with the remarks made by myself (which I now submit to you), will furnish you with the best description of the facts of the case.

Before commencing the proceedings, the coroner said he wished to mention a matter to the jury. His attention had been called to an examination that had been made of the colliery, and he wanted to know at whose instigation that examination was made. Mr. Ford was then called into the room, and the coroner put that question to him. Mr. Ford replied that it was the men themselves who suggested and carried out that examination without any instigation by him. The coroner said that it was a most improper proceeding. They certainly had the right to make any examination they thought fit, but they had no right to publish the result of that report and place it before the jury. It was the only time, with one exception, that such a proceeding had taken place since he had been coroner. It would tend to have a most prejudicial effect on the minds of the jury, the majority of whom must have seen that report, but he could only tell them that they must dismiss it from their minds altogether. If Mr. Ford had not moved the blame from his shoulders, he (the coroner) would have felt it to be his duty to have severely reprimanded him. It was a most impudent thing to publish a report of an investigation and state that nobody was to blame before the jury had heard the evidence of one single person on oath. It was perfectly right and praiseworthy for men to go down the pit and make an examination, for by that means valuable information might be laid before the jury; but what he complained of was the publishing of that report exonerating everybody from blame. Such a course would tend to stultify the jury and lead them by the nose. He might state that the newspapers stated that the examination was made at the invitation of Mr. Ford, but then the newspapers did not always get the correct information, but they got the most correct they could, and such as was supplied to them. He had heard Mr. Ford's explanation, but the report which had been published at any rate threw a certain amount of suspicion on Mr. Ford, and he ought to know much better than to allow such a proceeding to take place. Mr. Rhodes presumed that after Mr. Ford's denial the coroner did not say that he had caused the examination to be made. The coroner said he did not, but he was bound to say that Mr. Ford appeared to be the most likely man to suggest it. Mr. C. E. Rhodes said that Mr. Ford told him on the Saturday that some men wanted to go down the pit. The coroner said he did not at all object to the men going down the pit, but he objected to them publishing their report of the investigation before the jury had arrived at a decision. The coroner was informed that the reporters had been present at that meeting, but he hoped they had more sense than to attend, for by stopping away they would show more sense than those who invited them to be present.—The coroner's statement was entirely concurred in by the jury.

Charles Edward Rhodes said he was the certified manager at the Aldwarke Main Colliery. The owners of the colliery are Messrs. J. Brown and Co., Limited. They purchased Aldwarke Main and Carr House Collieries about 18 months ago. Both collieries are now worked together. He produced a plan of the colliery when the explosion took place. He explained the plan, and showed that the bodies were found in the pack road going into the Carr House Colliery. He was not at the colliery when the explosion took place. He was at Stockport. Naked lights exclusively were used in the pit. It is the Barnsley seam which is worked.—By Mr. Parker-Rhodes: He last saw the workings on the Saturday previously.—By Mr. Wardell: He had only been three weeks certified manager of the pit. He became so on the 20th December. At present the pit was being worked by lamps. They are not working in all parts of the pit. When they do, lamps will be used in all parts of the pit. It is the determination of the owners of the pit and himself. A resolution had been come to not to allow anything but locked safety lamps in any of the workings.

Robert Copley said he resided at Mangham Quarry, Parkgate. He was a fire-trier at Aldwarke Main Colliery. He was on duty on the 15th inst. from 10 o'clock on Monday night until 6 o'clock on Tuesday morning. His duties were to inspect the south part of the pit, to see that there was no gas and nothing wrong with the roadways. It included the roof and everything. He went along that pack road shortly after one o'clock on Tuesday morning, and looked at the roof and everything seemed

right. There was no gas anywhere in the pit, except what was in the deep part of the workings, and there is always some there. It is so diluted that it is harmless. It was about 1,500 yards from where the accident occurred. He made a report of the condition of the pit in a book kept for that purpose, a few minutes before five o'clock. The book is called "The Ventilation Record Book." It is a general record book. If the roof fell he should record it in the pit. He reported that everything was "good and safe." He had been deputy since last September. He had been engaged in pits over 20 years. There was nothing unusual at the time he went off work on the morning of the explosion.

He had never seen the slightest symptom of gas in that district of the pit before. He was in bed when he first heard of the explosion, and he went to the pit. He went down, and was rendered helpless by the chokedamp, and had to be taken out helpless. As a matter of opinion, he thought there had been a fall of roof in the Carr House goaf, and the stoppings had been blown out; the gas had escaped into the roadway, and met the naked lights of the men.—By Mr. Wardell: He had the whole of the south side of the pit to examine. He went to the third south ending shortly after he went in the pit. He was not told that the men, the previous evening, had been sent out of the pack road. He did not know anything about it until after. If a place is "on the weight" he would not allow the men to go to the work if he considered it dangerous. He would consider it dangerous in the goaf when the roof had fallen in. He did not hear it was "on the weight."—By the Foreman: It is usual to let the men go in after he had examined.—By a juryman: He examined the pit with a safety lamp. He allowed the men to go into the pit with candles although he had examined it with a safety lamp.—By another juryman: The men had never complained to him about there being danger. He had heard since that the men had heard it "thumping" the day before.—By Mr. Rhodes: It is against the rules for a fire-trier to try the pit with a candle; if he did he would commit a breach of the rules.

Thomas Speight, deputy at the Aldwarke Main Pit, was on duty on the morning of the accident, having succeeded previous witness at six o'clock. He saw him, and a report was made to him to the effect that the Carr House workings, where the explosion occurred, were "all right and safe." Copley then left the pit. When the explosion took place, about twenty minutes past six o'clock, witness was in the pit bottom, but he did not hear the explosion. He would be about a thousand yards from the explosion. He first heard that there had been an explosion by a young man bringing him a report that his father thought there was gas in his place, which was in the south level, but witness replied that it was impossible for gas to rest in that level, because the ventilation was so good. He told the young man to go back to work, and sent Holroyd, one of the deputies, to see if there was any danger, and witness followed up and found that there had been an explosion. He went to the top of the first south ending, but the after-damp was so strong that he would not face it and returned. He then got to know that there had been an explosion, and made his way to the scene, and found the body of Usherwood in the third south ending. There was also a stopping blown out at the top of the first south ending, and he and Ford repaired it. He saw one man's body found, and then had to leave, but on his return the whole of the bodies had been recovered. They found a slight fall of roof on the top of the ending. He went into Griffiths' working place, where he found the stopping dividing Aldwarke from Carr House had been blown down, and the place was as full of gas and after-damp as it very well could be. His opinion as to the cause of the explosion was the same as that formed by Copley.—By Mr. Wardell: The reason he did not sign the book on the day of the explosion was because he was completely "muddled," he had worked so long, and was so full of after-damp that he could not have signed it. It was his practice to travel with a horn lantern, but if he were called upon to examine a goaf he should go to the pit bottom for his "Davy." From ten in the morning until two in the afternoon there was only one deputy in the pit. There are about 300 men and boys in the pit at one time, and during the four hours from ten to two o'clock there was only one deputy in the pit, but Mr. Ford used to go into the pit and travel it with a horn lantern.—By the jury: It was a brick stopping that had been blown down.—By Mr. Rhodes: He did not "try" for fire with a horn lantern, but only used it on the main roads where the men used naked lights. He did not think there was a large quantity of gas that was fired. He saw traces of fire on the pack wall, but only small traces.—Mr. Wardell thought it was absolutely necessary for a deputy to carry round with him a Davy lamp, and every time he goes round to look for gas. He should imagine that it was an oversight for the goafs not to be examined except from morning to morning.—By Mr. Rhodes: Witness had seen gas in the goaf, but not for a twelve-month.—Mr. Wardell: I certainly do not approve of a deputy going round with a naked light. It was an opinion held very strongly.

Thomas Ainsworth, who found the last six bodies in the pit, deposed that he was a deputy at Aldwarke Main Colliery. He saw all the men found. They were all buried within the goaf wall in the third south ending or level of the Old Carr House Colliery. There was no doubt that they had all been killed by the explosion.

Mr. Wardell, Government Inspector, reported as follows:

Aldwarke Main Colliery is in the district over which I am the chief inspector. On arriving at the colliery on the morning of the explosion I found steps were being taken to recover the bodies of those who had been killed, and in order to attain this the very greatest care was requisite, the Aldwarke Main and Carr House pits both being ventilated by means of furnaces, and in the latter the return air passes immediately over the flames. Trustworthy and competent men were stationed in the returns at each pit, in order that, were the critical moment to arrive rendering necessary such a course of action, the separation doors might be at once opened, and the return air cut off from the fires. By carrying the air gradually through the district affected by the explosion, and proceeding with proper caution, the bodies were all recovered during the same afternoon. Nothing was done without due and mature deliberation, and I am happy to record that, taking part throughout the day in the consultations rendered necessary, I thoroughly concurred in all that was decided upon, and am of opinion that the re-opening of the pit was conducted in a careful and creditable manner. The Barnsley seam is being

worked at this colliery, and both here and at Carr House, which forms part of the same mine, there are very large areas of goaf standing in many parts, (owing to the hard and rocky nature of the roof,) apparently as when the coal was first removed. The up-cast shaft at Carr House acts also partly for Aldwarke Main, a stopping having a regulator in it being built between the workings at each pit, and a portion of the air from the district where the explosion occurred passing through. To a great extent in this neighbourhood the coal has been got, a few pillars only, at the extremity of what are termed the Carr House levels, being left, and it is here from whence, in my opinion, the gas came. The district in which this coal is being worked is called the Third South, and the distance from the levels to which I have alluded, to the shaft is 1,100 yards. The appearance of the roof and sides, and of the *débris* generally, together with the positions in which the stoppings and sheets were blown, all clearly indicated to my mind the fact that the explosion occurred at the point where the bodies were found, or at least six of them, the seventh having apparently lagged behind, he being found some little distance from the rest. In making this inspection of the pit, which I did so soon as the ventilation had been sufficiently restored, I was accompanied by my assistant, Mr. Gerrard, by Mr. Rhodes, the manager; and by Mr. Jacob Higson, and others. It was evident the men had never reached the "face" where they were to work, but had encountered the gas at the point where they were found, and as they were carrying simply a naked light an explosion took place. All the bodies were more or less burned; yet beyond the stoppings and sheets in the immediate locality being blown down, some only partially, no damage was done to other parts of the pit. On either side of the pack road where the gas was ignited there exists a considerable goaf, in which the force of the explosion would naturally to a very great extent expend itself, the resistance being comparatively slight; and this in a measure accounts for the trifling amount of damage, and the localisation of the effects of the explosion. It is my opinion that the gas which existed at the point I have mentioned, and which may never have shown itself at the time of the examination by the deputy (one o'clock that morning), was forced by a fall, somewhere in the goaf along the levels and down the road to the light which the men were carrying; and as in a goaf of this magnitude, some 50 acres, there are acres together where the roof has never fallen, it is impossible to say how large the fall may have been. Some of the stoppings must have been blown down by this fall, and I judge this from their position, the explosion itself forcing out the remainder. No traces whatever exist in the direction of the shaft nearer to it than the west end of the third south ending. In this colliery, as at Rawmarsh, naked lights were used throughout the pit, and, further, the ventilation here also seemed to me very good and the air roads of sufficient size. The amount of air ascending the up-cast at Aldwarke is 150,000 cubic feet per minute, and the amount passing into the third south 50,000 cubic feet, of which 11,000 cubic feet scaled through the goaf, leaving 9,000 cubic feet passing to the face of the Carr House levels. And yet our inquiry here to-day is another proof of the liability of an admittedly well ventilated colliery to explosions of gas in this seam so long as naked lights are used. In my opinion, however unnecessary the use of safety lamps may have been thought generally in the mine, yet here in these Carr House levels, whilst working off this isolated piece of coal, in the midst of an enormous extent of goaf, and when the pressure must have been very considerable, naked lights should have been carefully prohibited. From the evidence, and from my examination there seems to me to have existed a laxity with regard to the keeping of the books which are required by the Act. The sixth general rule requires that a record shall be entered in a book whenever men are withdrawn from any part of a mine, by reason of any danger whatever. A further record must be made that the place is safe before the men are re-admitted. This seems to me to have been entirely neglected. So long as owners and managers continue to allow the use of, and workmen are so recklessly bent on using, naked lights in these fiery seams, repetitions of such calamities as this will inevitably arise. Whatever it be, whether a question of cost, or one of inferior light, so long as this risk is run, the best management in the world, coupled with the most perfect system of ventilation and the present efficient inspection, will never secure a mine from danger whilst working seams of the fiery character of the Barnsley seam, and subject to sudden eruptions of gas. I speak plainly and emphatically, because I think it of the utmost importance I should do so. We have hardly recovered from the shock caused by the dreadful explosion at Rawmarsh, before we are again involved in another, similar in many points, and chiefly in having the same cause. Year after year I have advised locked safety lamps generally in these seams, and advocated their adoption in every way. It is a very great mistake, and one which many have fallen into, to imagine that the use of safety lamps in a colliery means diminished ventilation or less watchful care, and consequently greater danger. If this were the case, I should be the last to advocate such a measure. At the collieries in my district, where safety lamps are used exclusively, I find the ventilation to be just as good and the discipline just as efficient as at those mines were naked lights are used, and I maintain that as the use of the lamp is a higher state of perfection in the working of these collieries, so the adjuncts, such as adequate ventilation, and skilful management increase in proportion, and all working together support each other, and render the mode of working safer and more secure. I have certain recommendations and suggestions to make to the owners, which I think will tend, if carried out, to increased safety. And these are—To use Stephenson's locked safety lamps exclusively; to remove the lamp cabin to the surface; to adopt mechanical ventilation; to abandon altogether the small amount of coal left in these Carr House workings; to enforce better discipline with regard to the keeping of the books required under the Act; to arrange that there may be no such lengthy interval of time elapse between the examination of a working place by the fire-trier or deputy, and the arrival of the men, as was the case on the day of this explosion in the third south level; and I have only to hope further that the introduction of lamps may ultimately lead to the gradual disuse of gunpowder. Every facility has been afforded me by the owners and manager for completing my inspection of the pit, and I have therefore to render them my thanks, and I am most thankful to add that the Carr House Pit is already at work with safety lamps, and that naked lights will not again be introduced at Aldwarke Main.

In summing up, the coroner said that after the very elaborate report just read by Mr. Wardell, it would be unnecessary for him to say much to them. He was glad to find that Mr. Wardell was of opinion that nobody was to blame, for that freed them from the unpleasant duty of imputing blame to anyone. With regard to Mr. Wardell's suggestions, they must be concurred in by everyone. He had the honour to be coroner over a very large district, and he could say that there was no profession, trade, or calling in that district which was so dangerous as the use of the naked lights in the Barnsley seam. In the Aldwarke Pit, as in the one at Rawmarsh, the ventilation was excellent, yet the result was two fearful explosions, 23 lives being lost at Rawmarsh, and seven at Aldwarke. That convinced him, as it must convince the jury, that the use of naked lights in the Barnsley seam was dangerous in the extreme, and if he had the power he would prohibit their use. If these two terrible acccidents did not convince the authorities of the necessity of using lamps, he did not know what would. The only verdict the jury could find was one of accidental death, and if they thought that the circumstances of the case required any recommendation they must say what it should be, and it would be his duty to add it. The room was then cleared, and after a short consultation,

The jury found a verdict of "Accidental death," and appended to their verdict the recommendation "That a larger number of efficient deputies should be employed, that the use of naked lamps should be "discontinued, and that safety lamps only should be used." The jury also referred to the manner in which the "danger record books" had been kept, and Mr. C. S. Rhodes, the certified manager, assured the jury that in future their recommendations should be strictly carried out.

On 23rd June an explosion of gas occurred at Orgreave Colliery, near Sheffield, belonging to the Rother Vale Colliery Company, by which 16 men were more or less severely burnt. Only one poor fellow, however, succumbed to his injuries, after lingering till 12th July. The seam worked is the Barnsley, and at the time of the accident naked lights were in use in parts of the workings of the mine, and safety lamps in others, a system more objectionable perhaps than the exclusive use of naked lights.

There were about 200 persons at work in the pit when the gas was ignited, and the ventilation, as reported before the explosion, was in a most efficient state. The amount of damage done to the workings was inconsiderable, and the carbonic acid gas was almost immediately carried away, no derangement of consequence having taken place with respect to stoppings and doors.

Upon examining the mine carefully I could not ascertain that there had been any fall of roof, and I do not think that in this instance the gas had been lurking in unexplored portions of the goaves, and expelled by any such cause. Neither could I trace, from reports or otherwise, the existence of gas in any part of the mine previous to the explosion. The gas seemed to me to have proceeded from the floor, and to have been the result of one of those sudden outbursts that characterize this seam. On the south side of the pit, in two of the benks, evidence pointed conclusively to this inference, and as naked lights were being used in this immediate locality, the explosion would naturally follow immediately on the eruption. I very earnestly recommended to the owner that locked safety lamps should in future be exclusively used in this colliery, and I am glad to say they were at once adopted. The manager at the time of this misfortune, a very practical and useful man, who seemed to be energetically engaged in perfecting his system of ventilation, has since, I regret to say, died very suddenly.

The next case of fatal explosion of gas took place at the Dark Lane Colliery, Mirfield, on 1st July. This colliery is the property of Messrs. Wheatley, Nevin, and Barrowclough. Two shafts were being sunk, one of which had reached the coal, the Black Bed seam, at a depth of about 200 yards. The bottom of the pit was finished and walled, and a scaffold was erected 16 yards above the seam; on this scaffold the four men were working, who were afterwards killed by the explosion. They were engaged in blasting down some of the shaft side in order to form the pit porch. Underneath this scaffold was another, erected for the purpose of catching any stone and rubbish which might fall, the space between the scaffolds being about 30 inches. The Black Bed of coal was giving off a small amount of gas, and it was essentially necessary that there should be a current of air circulating at the bottom sufficient to dilute and carry off this gas. Ventilation was produced by means of air pipes from the surface, the air being exhausted by a small fan. These pipes were carried through both scaffolds by apertures, and had they been kept there, the accident might not have occurred. It was the custom to detach one or two of the lowest lengths of the pipes previous to firing a shot, and afterwards to replace them; but, unfortunately, after the last time of their being so detached, they had not been refixed, and the men continued to work on the scaffold with the last length of air pipe some yards above them. This arrangement necessarily caused a stagnation of the air underneath the scaffolds, and the gas which was being given off from the coal at the bottom accumulated in the shaft between the seam and the scaffold until it ignited at the candles in use, and a terrific explosion ensued. The scaffolds were blown up, and, with the men, fell in a shattered mass to the bottom. The poor fellows must have met

Sketch of the

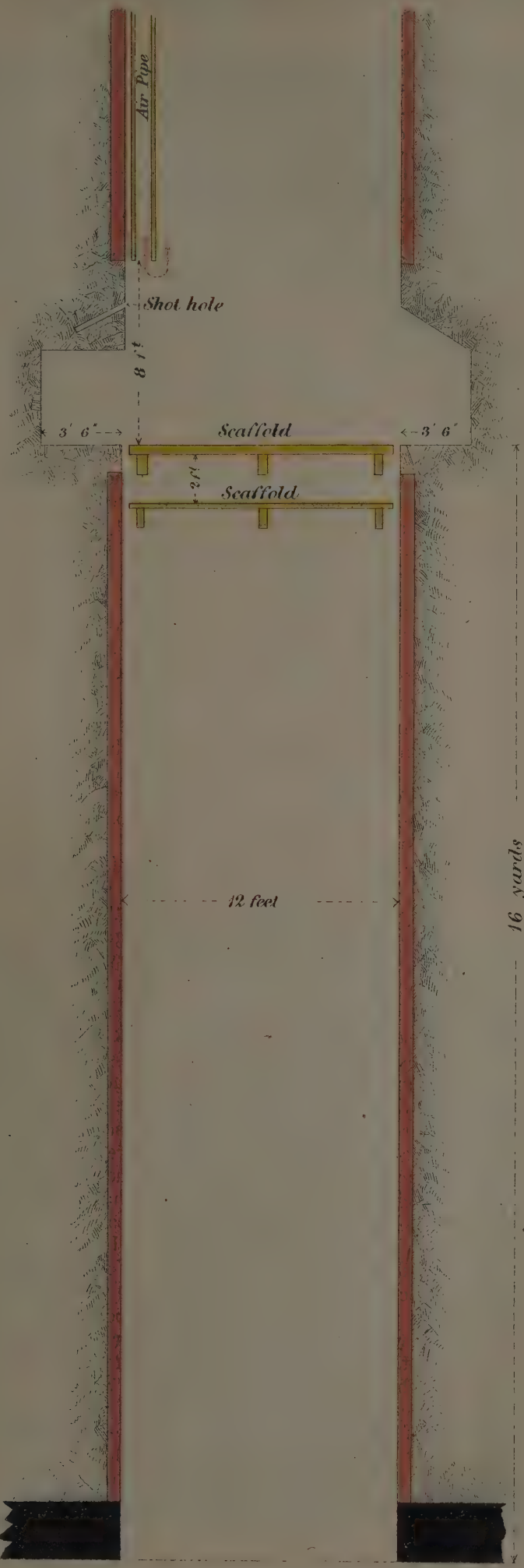
SHAFT

DARK LANE, COLLIERY,

MIRFIELD.

Belonging to the Mirfield Coal Co

Where explosion occurred on the 1st July 1875, by which four men were killed.

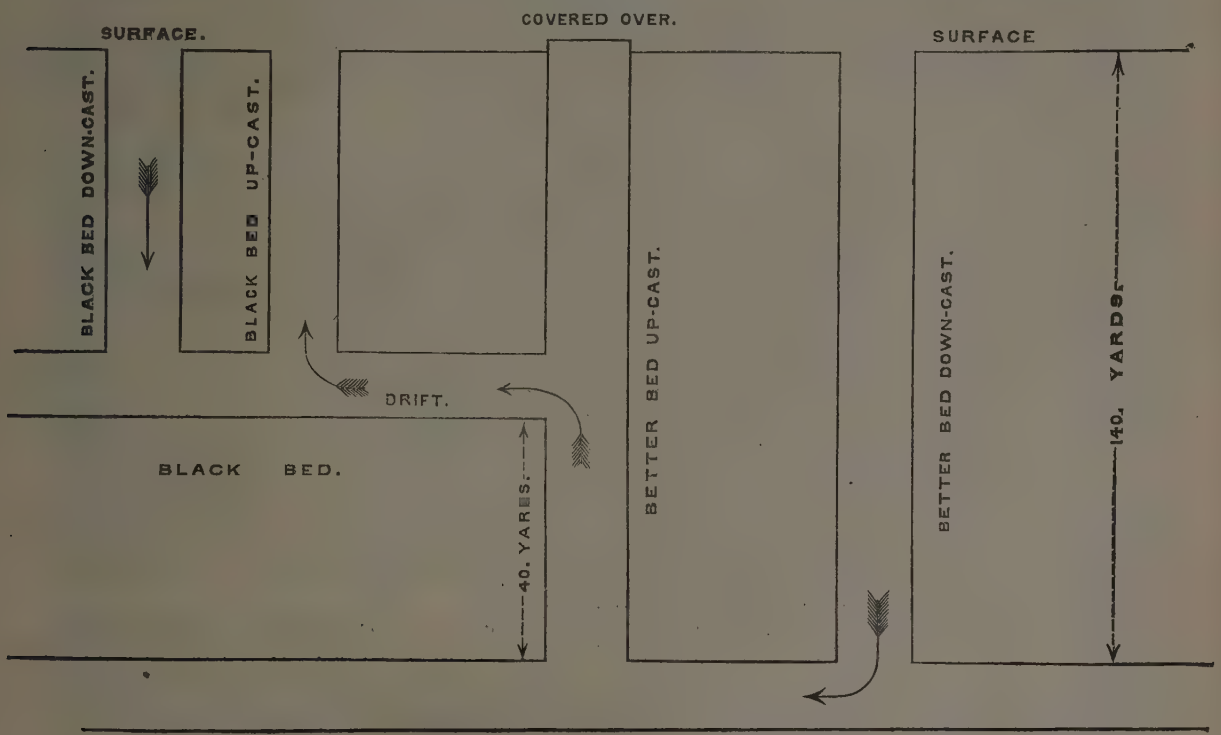


T. M. Wardell

with instantaneous death, but their bodies were not recovered for several hours, owing to the water and material collected at the bottom. It appeared to me that the manager was much to be blamed for allowing these men to work under the conditions I have described, and, by your instructions, I instituted proceedings against Mr. John Nevin for violation of the First General Rule. The bench decided that the precautions which the Act of Parliament requires had not been taken, and a fine of 10*l.* and costs was inflicted.

The accident which caused the death of Abraham Pearson on 7th August differed from the generality of those from explosion, as while the gas ignited underground the man who was killed was on the surface.

The colliery in question is called Crowd Hill Colliery. It is situated near Bradford, and is the property of the Low Moor Iron Company.



There are two shafts to the Black Bed, and two to the Better Bed, the up-cast to the Better Bed being covered over at the top, and a drift taking the air to the Black Bed up-cast. The Black Bed here is almost worked out, while the Better Bed is only just won. On the night before the explosion Pearson, with others, were engaged lowering centres down the Better Bed up-cast to build a porch, and for this purpose they removed the covering at the top of the shaft. This was replaced about 10 o'clock at night, and at 6 next morning Pearson, finding a hole had been left in it, got on to the bridge over the shaft to repair it, when an explosion took place, lifting the bridge and blowing the man down, injuring him so that he died soon after. The only workings at the time in the Better Bed were a pair of levels about 200 yards long, and gas exuded freely from the coal here. No one was in this seam at the time, and the only persons in the Black Bed were the furnaceman and the deputy, who had just gone down. The furnace had been left the previous day at 4 p.m., and the explosion took place about 10 minutes after the man had broken up the fire in the morning. He was knocked down, but otherwise uninjured. The explosion was probably caused by the removal of the cover from the up-cast the day before, which would cause the air to go down that shaft to the furnace, and interfere with the ventilation of the levels I have mentioned. Gas would then accumulate, and when the furnaceman broke up the fire next morning (thus setting in motion the current of air, which during the night, when the furnace was doing very little work would be comparatively stagnant) the gas would pass on to the flames.

It is the intention of the owners to substitute mechanical for furnace ventilation at this mine, and thus a similar catastrophe in the future will be avoided here.

On Monday 6th December the country was startled by the report that a fearful explosion had occurred at the Swaithe Main Colliery near Barnsley. The report proved only too correct, and it becomes my painful duty to state that no less than 143 lives were lost by this calamity. For a period of nine years, or since the explosion at the Oaks Colliery, no accident involving such disastrous results has occurred in this district, and the hope was growing that with

increased watchfulness and care, added to the various modes of more efficient ventilation introduced by science from time to time, and a strict attention to the provisions of the recent Acts of Parliament, whereby life is protected to a great extent, misfortunes like this were things of the past. The accident in question rudely dispelled any such illusion, and prominently brought before us the stern fact that when a single joint in the machinery gets out of gear we are still liable to the most appalling consequences.

The explosion occurred, as I have stated, at the Swaithe Main Colliery, the property of Messrs. Mitchell and Co. This colliery is contiguous to and indeed connected with the Edmunds Main Colliery, belonging to the same owners, where an explosion occurred in 1862, involving serious loss of life.

I have already, according to your instructions, made a special report to you on this accident, and it will be best now to lay before you a plan of the workings in that portion of the mine affected by the explosion, and the chief points of evidence produced at the inquest. I also add the remarks made by myself, my colleagues, and the coroner, and append thereto the verdict, which, after a prolonged and patient investigation, was returned by the jury.

Richard Forster, of Swaithe, said he was an articled pupil to Mr. John Mitchell, mining engineer. He had known the Swaithe Main Colliery for three years and a half. Mr. Mitchell had been the certificated manager of the colliery during the whole time witness had been there. Witness had attended to no other pit except the Edmunds Main under the same company. He had been employed in preparing a plan of the workings of the colliery. [The plan was affixed to the wall of the court, so as to be within the sight of the jury.] The plan represented the dip workings of the Swaithe Colliery. He had travelled all the roads marked on the plan, and he could certify from his personal knowledge that the plan was a correct one. The diameter of the drawing shaft was 13 feet 6 inches, and the depth 230 yards. The diameter of the up-cast shaft was 12 feet 9 inches, and the depth 225 yards. The distance between the two shafts was 68 yards. The pit was ventilated by the down-cast shaft by means of the furnace which was at the bottom of the up-cast shaft. The air divided immediately at the bottom of the down-cast shaft. One current goes down the engine plane, and splits first at the north dip level; then it splits at the third board of the second north dip level; and there joining another current the joint currents go up the slant drift, along the drift level to the end of the workings. The third split was at the "double three level," and the air proceeded up the first rise board, and along the old No. 5 level. Then it commenced to return round the straight level, and separated at the bottom of No. 4 drift. The witness gave further explanations of the arrangements for ventilating the pit.

Joseph Bennett, Calker Lane, Worsborough Dale, said he was a deputy viewer in Swaithe Main Colliery, and on the sixth of the present month he was on the day shift. He went down the pit at 5.25; and the first place he went to after leaving the pit bottom was the "box hole," or place where the men met. When he got there he saw Henry Jacques, who was a day deputy. Before he got to the "box hole," he saw the night deputies, Joseph Sheldon and William Midgley. They were examining the lamps as the miners came down, before they went to work. Witness was principal deputy at the pit, and had general overlooking of the districts of the pit. Sheldon in his district had the dip workings, Briggs' siding, dip siding, and the shunt. Witness saw a deputy named Allen along with several others when they met at the box hole; and then Sheldon reported as to the state of the pit, and all was right and in working order. Allen was the underviewer, but he gave witness no further information. In addition to himself there were Sheldon, Allen, Beavor, George Beardsall, William Earnshaw, and Henry Jacques. Beardsall's district was on the right side of the pit, No. 1. He escaped, and was living now. Jacques was dead. His district was No. 2; William Earnshaw's was No. 3; Thomas Beavor's was No. 4. He met Jno. Waterworth, a deputy, and one of the deceased in the box hole. He was a general day deputy and had no district. All the deputies knew their own districts; and there was no fear of one party clashing with another.

The Foreman: Can you give us any information about an accumulation of gas?

The Coroner: We have not got to that yet.

Mr. Maule: We must take things in order, or we shall get confused.

The Coroner: What was the particular spot where he was working?

Witness: I don't know whether you could have got in, it was such a small place; it was in No. 3 district, and was an abandoned place.

The Coroner: Was it continuously reported that there was gas?

Witness: Yes, up to Saturday morning. It had been continually reported up to the 4th of December.

Mr. Maule: It is reported in the colliery books up to the 4th, and then it seems to have disappeared.

Mr. Mellor: It appeared so from the ventilating record book, signed by the viewers.

The witness continuing, said he went into "double three," and from thence into Joshua Eyre's working place in No. 4. Earnshaw was there, and was about to fire a shot. Eyre came out of his working place before the shot was discharged. This was about nine o'clock in the morning.

The Coroner: Did you stay till the shot was fired?—Yes.

Was it fired in the face of the coal?—Yes.

Were they working by candle or by lamp?—By lamp.

SWAITHE MAIN COLLIERY.

Plan of

DIP WORKINGS.

December 6th. 1875.

Scale 1 Inch.

REFERENCE

Intake Airways coloured	*Red*
Return	*Blue*
Doors marked thus	D

Frank. N. Wardill

Safety lamps they would be?—Yes.

Were they Davy or Stephenson?—Stephenson.

You had one too, I suppose?—Yes.

How did they fire it, how was the shot formed? The hole is bored, and then what do they do? Was there a fuse?—Yes; they light the ends of the fuse.

What with?—With a wire.

With a red hot wire?—Yes.

Which you heat at the lamp?—Yes; we put it through the gauze.

Was it very thin wire?—Yes.

Was the wire put under the glass and through the gauze of Earnshaw's lamp?—Yes.

That is the regular way?—Yes; that is the regular way.

The deputies in the district were allowed to do everything that the men are not allowed to do?—Yes.

In which direction did you go when you left Eyre's place? How far would it be?—Perhaps six or seven yards.

Did you pass Earnshaw and Eyre again?—Yes, I passed Eyre's place.

Were they there then?—Yes.

What were they doing?—Eyre was filling coal into a corve.

That was the coal which had been blown down by the shot?—Yes.

And where did you get to after that?—I got into double three.

Who did you find there?—I found John Godfrey and Philip Stocks, and they had got the rope under the corves.

What then?—When we had got the corves set going there was a regular rush of wind and dust down the double three jinny.

Where were you then?—I should be 20 or 30 yards from the top of the jinny.

Then the rush of air came up the jinny?—Yes.

Did it put the lamps out?—No.

Were you standing still or walking then?—We were standing when it came.

What did you do?—When the air and the dust came up we made for the incline.

Did you go down or up?—We tried to go up the incline but we could not get up.

Then you went down the jinny, and then came towards the engine plane, or inclined plane, and you could not get up it?—Yes.

But you got to it?—Yes, but we had to turn back and try if we could get up the back travelling road.

What was it that kept you, was it smoke?—Yes.

Was it dense?—Yes; very thick.

Had your lamps gone out then?—No.

You turned up the jinny did you?—We came a few yards back on the level, and then we tried again the inclined, or engine plane.

Mr. Rhodes: That is not the same as the back travelling road?—No.

The Coroner: What did you find there?—We found it still as it was. We could not get up; we could not face it.

You could not get up at all?—No.

What did you do then?—We stepped back in the level in the siding, and we stayed there a few seconds, and then the men who were with me left me.

Who were they?—Stocks and Godfrey.

Which way did they go?—When they left me I believe they tried the travelling road again.

What did you do?—I stood still a little, until it came very thick and put out my lamp, and I thought that was a sign that the gas was coming down very fast, and that it was getting to the top side, where I was. So I thought I should perish certainly if I stopped there, and I could only perish if I tried to get to the pit bottom; and I made an effort.

Which way did you go?—Up the engine plane, and I went on my hands and knees. I crawled in this way to the top of Briggs' siding, and then went along to the pit bottom.

Who did you meet there?—I was in the dark and so were those who were with me, and I had been lying down beside two men, who proved to be Joseph Sacker and Samuel Gilbert. I heard a voice, as it seemed to me, about 12 or 13 yards distant, and it proved to be that of Samuel Gilbert.

As you lay by the side of Joseph Sacker you say you heard a voice; how far distant do you say it was?—It was 12 or 13 yards higher up the incline.

What was Gilbert doing?—He was lying down, and he called out, and then Sacker, who was beside me, spoke, and then we asked one another who we were.

Had you any idea where you were?—I knew where I was; near to the mouth of the new drift.

What was done when you heard the voices of each other?—They asked who I was, and I told them; and then they asked me what was the matter, and I said I could not tell them exactly, although I thought I knew. They asked what was the right way to go, and I said straight forward. As I lay beside Sacker he said to me "Oh, it is hot;" and I said, "It is hot lad," and I crawled a bit further. Then Sacker did not seem willing to go, and I followed after Gilbert and overtook him.

Did Sacker come out then?—He came out afterwards, but I cannot say when.

Did you stand up or crawl when you started to follow Gilbert?—I crawled out on my hands and knees.

How far did you get up to him?—I believe I was aside of him when we were crossing the level which runs straight across the incline, that is straight through Briggs' siding to the slant level.

A Juror: What is the name?—The place is just as I have said.. I saw a small fire burning.

The Coroner: Do you mean the coal on fire?—No; I think it was a small wood fire, but I cannot say.

This was at the slant level?—Between the two inclines.

Mr. Rhodes: Was it in the dip between the two sidings?—I believe it was.

The Coroner: Then you went on?—Yes.

How did you get help?—I did not get help.

Then you went on to the bottom?—Yes.

Were you able to get fresher air as you went on?—Yes; it began to get better.

Where did it begin to get better? Can you tell?—Yes.

Where? Had you any light?—No; but we could feel it.

It gradually got better as you went on?—Yes.

Did you pass over anybody do you know?—No.

And you got out?—Yes.

Is it the Barnsley bed which is being worked?—Yes.

What is the thickness of the seam?—Nearly nine feet I should say.

Do you know the length of the engine plane?—I do not know exactly, but I should say about 700 yards.

When you got to Earnshaw and Eyre were they ready for firing the shot?—Earnshaw was the man in charge.

When you got there was it finished?—No, it was not finished.

Were they ramming it down or charging it?—Yes.

Who was charging it?—Eyre.

And Earnshaw was superintending it?—Yes.

He was filling the hole with gunpowder and ramming it, I suppose?—They had a cartridge.

They were putting it into the drill hole?—Yes.

Then they simply had to put the cartridge in?—Yes.

Has the cartridge a fuse to it?—Yes.

Does it require any ramming?—Yes.

What do they ram with?—With a copper rammer.

And after ramming it they put the fuse. How is it applied?—They put the fuse to the cartridge.

It is there to begin with?—Yes.

Do you know where the cartridges are made? Are they bought ready made?—They make them at home.

You mean the men make them at their own houses?—Yes.

Do they fill the cases at home as well as make them?—They make the cases at home, and I believe they fill them too.

How is the fuse attached, and when; before they bring them or at the pit?—Before they come.

They are all filled, as far as you know, before they are brought into the pit?—Yes.

You have not any loose powder to blast with?—I have seen the drifters use powder.

Mr. Maule: Did the men carry the cartridges in tin cans?—Yes.

Not simply in paper, under their arms?—No; it is not my duty to superintend the firing of the shots unless I have a district, and when I go round with a deputy as well.

In the slant drift level were shots fired, do you know?—When, sir?

At any time you know?—Oh, yes.

They blast it there by shot fire?—Yes, I have seen shots fired in that part of the mine.

The Coroner: How long since?—It will be 12 months since. After the blower of gas in 1874, the men have always been withdrawn from the workings before blasting.

Mr. Maule: Did the gas explode?—No, I put it out.

Did it ignite?—Yes.

And I suppose that was a sort of warning that it would not do to be shot firing with the men in the workings?—Our duty was always to deliver in our statements on returning, to James Allen, and he told us what to do. I told him what had occurred, and then he told me to cease firing shots.

I think you have told us that there was no more shot firing whilst the men were in the workings?—None in the slant drift level until the men were withdrawn.

Is there any particular time in the day for the men to be withdrawn before shot firing takes place?—No.

Before the shot firing took place in the slant drift level were the men withdrawn?—Yes. I have often waited at the top or bottom of the drift with Jacques until the men had got out, and then we would charge the hole.

When this blower of gas was reported, it entirely altered the plan of shot firing, and after June it only took place in the slant drift level when the men were withdrawn?—Yes; during the last six months I do not know of any fired except in this way.

How do they work the coal then?—By wedging it.

Then it has only been wedged for the last six months?—Yes.

The fact is that six months ago you won the coal by shot firing; when the men were out, of course?—Yes, at one place.

No cartridges are used in the south drift level?—None at all.

After a short adjournment the examination of the witness was continued, and he produced No. 72 deputy lamp, which had been used by Earnshaw to fire a shot on the morning of the explosion. In cross-examination by Mr. Hopwood, he said it was practically impossible to heat a wire by pushing it through the gauze of an ordinary miner's lamp, whilst it was quite possible, and was usually done,

with a deputy's lamp in firing a shot. If a man's lamp went out he could light it at a station for that purpose, and there was one at the slant end. A boy was appointed to stand at the pit top with the powder required, and the lampman had control of it. He had seen the men carry powder and cartridges in tin canisters.

Mr. Hopwood: You could not see the powder in the cartridges?—No; nor in the canisters either. (Laughter).

Mr. Hopwood: I am rather used to this sort of thing, you know.

Witness: Perhaps I shall get used to it before very long.

In answer to further questions witness said that the men sometimes carried one pound of powder in their canisters, but never four or five.

Mr. Hopwood: Have you heard that since the explosion canisters containing five pounds of powder have been found in the pit?—No.

By Mr. Mellor: Earnshaw was an experienced man, and had been an underviewer about four years. Earnshaw went to the hole after the shot had been fired and found the air pure. He could not tell how much powder was used by the drifters in blasting. The quantity was usually left to their own judgment.

Mr. W. Rayne, a clerk at the colliery, produced the report books of the deputies; and Robert Schofield, collier, Worsborough Dale, said that he had the charge of the air-ways and ventilation of the mine, and inspected them on the Saturday preceding the explosion, when he found them all right. On the afternoon of the following Monday, hearing of the explosion, he went down the mine in company with other explorers. When he arrived at the bottom he helped to clear away some corves which had become entangled with one of the cages in the drawing shaft. A man named Sheldon accompanied witness down the engine plane. There they met Peter Jenkins, whom witness brought back. Sheldon went on down the plane and returned with some men. They then came out of the pit, but shortly afterwards descended again, along with Mr. Millor, of Strafford Main. They found all the doors blown, and evidences everywhere of the force of the explosion. Yesterday (Wednesday) he went down the pit, and a man named Bostock gave him some gunpowder in a tin canister, which would contain about 2 lbs. This was at the bottom of the drawing shaft; and witness took the powder to the magazine.

Mr. Mellor: Did Bostock tell you where he got the powder from?—Yes; he said from No. 8, fargate, on the slant drift level.

The Court then, after sitting for 10 hours, adjourned at 8.40 to this morning.

Jonathan Bostock stated that he had been employed as a day labourer at the pit since the Wednesday after the explosion, his duty being mainly to assist in clearing away the rubbish. He and two others, named Smith and Whitehouse, first turned their attention to making the partitions secure, so as to turn as much air as possible iuto the dips. On Monday last he went into the pit in company with Robert Schofield, a man named Lomas, and others. They went down No. 9 board, and after proceeding some distance, Schofield pointed out a place to him and said "That is where you will have to work." There was a great fall of roof at this point; he could not tell how high it was, or how far it reached. Schofield then left him in charge of seven men, some of whom had previously worked in the pit; the majority were strangers to it. They worked for six hours. No gas was perceptible. The first thing he found was the bottom part of a breakfast can; this was seven or eight feet in the goaf. Akers' name was written on the can. Whilst searching for the other part of it, he found a powder canister or bottle, six feet from the face. As he was pulling out the canister, a man named White caught hold the other end and said, "Here's a fuse here." Witness pulled out the fuse, and put it over the neck of the canister. He subsequently gave the canister to Schofield at the pit bottom. No bodies had yet been discovered where the canister was found; but the whole of the rubbish had not yet been cleared. He had not since worked in that part of the colliery. Last night he was in No. 4 level, endeavouring to find two bodies beneath a fall of roof. One body was discovered. It was that of a man named Jenkins.

By Mr. Maule: He could find no traces of the firing of a shot near where the canister was found. There had been no firing up to the "face," of that he was confident. Though he did not take the cork out of the canister, he imagined it would contain a pound or a pound and a half.

By Mr. Mellor: The canister was close beside the "chock." He believed no person went where he found the canister before he and Schofield did. Some picks were reared up against the wall near; and he noticed that none of the handles were broken. Where he was working last night (No. 4 level), he saw quite six yards of fall, and it was about three yards in height. The earth had fallen without being sent in a slanting direction.

By Mr. Parker-Rhodes: The fuse which his mate found near the canister was rolled into a smaller compass than is usual. The canister was in the chock six feet from the face. He certainly should not have placed it there if he been firing in that direction, but he was certain no shot had been fired between the entrance to the hole and where the fall was found, neither had there been any preparation for a shot.—In answer to the coroner, witness said the powder was in a place where he should expect to find it, if men had been allowed to use it there.

By the Jury: The body found last night was almost buried. It did not seem to be burnt.

George Colclough, a coal getter, living at Worsbro' Common, said he worked at Swaithe Main, but was not in the pit at the time of the explosion. He worked it on the Saturday before the explosion, his place being in the slant drift level. Henry Jacques was his deputy. So far as he knew there was nothing wrong in the pit on the Saturday. Where he worked was in No 8 fargate, and Henry Akers worked with him. The Coroner: In what state was the face when you left it on the Saturday?—Witness: It was holed about three yards long and seven yards wide.—In continuation, witness said Allen, the underviewer, spoke to him about blowing the coal down, inasmuch as it was harder than the rest, and was very difficult to get

down. This was while Akers and he where endeavouring to win the coal. They first asked him if he could give them some extra allowance for getting the coal, and he replied that he could not. He (Allen) then went and looked at the coal and said, "You must have a shot or two whilst you get through the worst of it." He also told witness that he must get some drilling tools out of the store, and he fetched them at two o'clock in the afternoon, telling the storekeeper that Allen had told him to get them. He subsequently took them into the blacksmith's shop to have them sharpened.

The Coroner: Did Allen say anything to you about powder?—Witness: Yes.—What did he say? He told us to get some, and to bring it on the Monday morning.—Did he say what you were to do with it? He told me to get a hole ready by two o'clock on Monday afternoon, and that Jacques would fire it.—Jacques was regular shot firer, wasn't he? Yes.—Why did'nt you go to the pit on the Monday morning? There was only one hole to drill, and did not want two men to do it.—It was not because of your thinking that anything was wrong in the pit? No.—Did you find any gas in the neighbourhood? I had seen a little at times.—Whom did you report it to? I have seen Jacques himself trying it in the goaf at the back, near the ceiling, but there was plenty of air in the face.—In continuation, witness said he went into the colliery the day after the explosion with a party, under the charge of Mr. Peacock. He saw no fire, or any trace of it. He came across several bodies, one of which he recognised. It was that of a man named Kendal, which was lying in the engine plane. Whilst going through the stone drift, off the engine plane, he found a canister in which he supposed there was powder; a fuse was attached to it.

Mr. Maule: Did you arrange with Akers about getting the powder?—Witness: Yes; he said he should buy it at Barnsley.—Was anything said about the quantity? Yes; two pounds.—Where did you part with him? On the Sheffield Road to Barnsley?—Have you seen him since? No, I have not seen him since. The reason I did not go down on the Monday morning was because there was but one hole to drill, and nothing then to be done until the shot was fired. I did not tell Akers I was going to leave him to drill the hole.

Mr. Maule: Is the fact that you didn't think it necessary to have two to drill the hole the only reason why you didn't go down on the Monday morning?—Yes.

In continuation, the witness said: Jacques tried a "fault" in witness' working place during the week previous to the explosion, and found a little gas there, about four yards from the face. The gas was only slight. The place where the shot was to be fired was the same as that in which the gas was found.

In reply to Mr. Mellor, witness said powder and fuse were to be obtained at the colliery, and that when any was given out an entry was made of it. He could not give any reason why he and Akers did not buy their powder at the colliery, except that powder was sometimes a penny a pound dearer than it could be purchased for at Barnsley. Even if the explosion had not occurred, he should not have gone down the pit until the Tuesday. He was informed by the blacksmith on the Tuesday morning that the drilling tools had been sent down the previous day.

Mr. Hopwood: Whether you get the powder from the pit store or anywhere else you have to pay for it?—Witness: Yes.

The Coroner: But only an authorised person can discharge it, and 2 o'clock is the time when the men are supposed to be out?—Witness replied in the affirmative.

George Simmons, a lampman at the colliery, and who lives at Worsbro' Dale, produced a canister of powder and a fuse, which he said were taken to the magazine last Tuesday evening. Schofield told him of the canister being in the magazine, and he (witness) had since taken care of it.

The coroner asked the foreman of the jury how much the canister would hold, and he replied about three pounds. It was what was commonly known as a "quart bottle."

The witness, in continuation, said he was appointed to give out powder at the colliery. From two to three pounds were generally placed in the cans; the quantity never exceeded four pounds. At the request of the coroner he uncorked the canister, and stated that the powder was of a coarser grain than that supplied from the colliery. Fuse was supplied from the colliery as well as powder, but it was not always wanted at the same time. All sales of powder were entered by him in a book.

By Mr. Maule: The colliers found their own canisters; and he could not therefore tell to whom the one produced belonged. He believed his book would show to whom powder was given on the day or two previous to the explosion.

By a Juror: If a man liked to buy powder in Barnsley, because he could get it a penny a pound cheaper, he (witness) was not aware whether the man could take any quantity he liked into the pit without being questioned.

By Mr. Hopwood: The canister in his possession had 23 marked upon it.

Mr. Hopwood said it was, therefore, the canister found in the slant drift level by Bostock.

Witness added that he had seen a canister which had been found in the stone drift. It was the same size as the one produced, and contained pit powder. It belonged to a man named Edward Rhodes. About two pounds of powder was in it. A third canister was found that morning. No cartridges were supplied from the pit. The men made their own, but he could not say whether they made them in the pit or not. Some of them had cartridge cases of their own, in which they could keep three or four cartridges at a time.

Hannah Akers, wife of Henry Milton Akers, stated that on the Saturday previous to the explosion her husband bought 2 lbs. of powder and a roll of fuse, at Mr. Wright's shop, Sheffield Road, Barnsley. He told her he wanted it for a shot, and that Allen had said he was to have a shot or two into the coal. The can produced was not her husband's. This was a quart canister; his was a pint, and, besides, the handle of it was loose. She saw the powder purchased by her husband. It was larger than that from the can produced.

George Beardsall, a deputy employed at the colliery, said he had charge of the No. 1 district nearest the Edmunds Main working, and was down at the time the explosion occurred. He did not hear or feel the explosion; in fact he did not know anything of it until he was told at 10 o'clock. A hurrier named Walton informed him what had happened. He (witness) was then on the South Swaithe levels. Taking Walton with him he went to the boundary jinny. After proceeding about 200 yards down, he found they could get no further in consequence of the after-damp, which was coming from the dip workings up the boundary jinny. He then returned to the north level, and sent Walton to fetch the men and boys from the south levels. After sending them up the Edmunds Main shaft he returned to the boundary jinny, and found that the after-damp had got more than 100 yards higher than when he was there before. He tried to get to the slide door in the boundary jinny, but at that time could not. He then turned back to two separation doors which divided the workings of the two collieries, and opened them in order that air might come down the Edmunds Main Pit into the boundary jinny. In about 10 minutes or a quarter of an hour the atmosphere was sufficiently clear to enable him to get to a slide door leading to the north D level. He there saw White and Pearse, a hanger-on, and sent them out by the Edmunds Main shaft. He then went down the north D level, where he found the after-damp so strong that he had to get some water to revive himself. He then adopted means to improve the ventilation, and in about a quarter of an hour the atmosphere was sufficiently clear to enable seven men to make their escape in that direction. Witness then spoke of the other means which he took to improve the ventilation, and to his finding the body of John Waterworth, a deputy, about 200 yards below the double doors. He was lying on his face, and appeared to have been suffocated, as he was endeavouring to come up by the boundary board. A few yards further on he saw the dead body of Henry Cawthorn; he appeared also to have been suffocated. At this stage the inquiry was adjourned until Saturday morning at 10 o'clock.

George Beardsall, who, in addition to that of the previous day, said that he went down the jinny, where he found a horse which had been blown almost to pieces. Two stoppings had been blown out in the slit above the benk level. They did not, however, interfere with the passage of the air, so he continued on his way down the jinny, and found the body of Thomas Bullock, who was lying about 10 yards below the body of the horse. Nearer the bottom was found the body of George Sykes, the horse-driver, but the after-damp was so thick that he could not see whether he was burned or not. He then became overcome and had to be assisted to the pit bottom. He did not explore any more that day. None of the bodies were brought out by him. He went down at 12 o'clock the following day. He conducted William Ward, of Manvers Main, round the "rise" workings. No bodies were found there. Through the boundary doors they found the bodies of two brothers named Allan. They then proceeded forward to the "return," thence to the pit bottom, and out of the pit. He could not say whether the bodies were burned, inasmuch as they were covered with dust. The return air was going all right. At six o'clock the same evening he went down again, accompanied by William Ward and others, and the object of their journey was to fetch out the six bodies he had previously named. The following day (Wednesday) at noon he again went down the pit. Wm. Washington was with him, and they went into Briggs' sidings. They found a horse lying at the bottom of the jinny. At the top of the jinny they found three bodies, but he did not know any of them. The bodies were removed from the pit by a party under the charge of John Sugden. They were burnt. Further on a body was found lying across the "slit" top, and it was also very much burnt. Through the bankgate he found three bodies—a collier and two hurriers. He knew two of them, John Bailey and John Partlett. They were all much burned. A "chock," which appeared to have been blown down, lay near Bailey. Went forward into another benk, and found the body of Benjamin Bennett lying close to the face. The next place visited was the Buff's siding levels into the "dip" where a fall of roof had occurred, and partly buried the carcass of a horse. Proceeding down the "dip" board some 50 yards down a large fall of roof had taken place. Seeing the horse buried they came to the conclusion that the driver, John Semley, was buried underneath, and they set men to work to find him, and after having dug the dirt away for some time the body was found. The body of Cawthorne, *alias* Bailey, was found 500 yards away from the place in which he worked. Bullock, who was Cawthorne's assistant, was found nearer the pit bottom; Sykes was about his working place, the Allans were about 120 yards from their working places; and Bailey, Partlett, and the hurrier were at their working places, as also was Benjamin Bennett. On Thursday, at six o'clock in the morning, witness again went down the pit, accompanied by about a dozen people. They went to the stables and were engaged for some time clearing the dead horses from the stables. The divisions of the "standings" were blown down. Then they proceeded down the boundary jinny, down the engine plane to the "slant" level into Board No. 5 in No. 2 district. They were going to fetch the body of George Woodhead, and close where he was lying a fall of roof had taken place. They brought the body out of the pit at six o'clock in the evening, having been in the pit 12 hours. He went down the pit again on Friday morning at six o'clock. He first visited the slant drift. Two bodies which had been found and removed to that place were brought out of the pit. Their names were James Green and Isaac Bullock. He then assisted to remove two horses from the slant level, and then came out of the pit. He went down again at nine o'clock that evening, and went to No. 4 drift. There they found the bodies of Charles Taylor and Pharaoh Bostock. Taylor was found at the back of the boundary board, and Bostock was found near the second slit, and his hurrier, Hall, was found near to him. They then went to Briggs' siding, and at the top of the jinny they found the body of a hurrier named John Nicholson, but he was not much burned. Crossland, a collier, was lying in the "benk." On Saturday morning he assisted in lighting the furnace, and came out of the pit having again been in 12 hours. On the Monday he again went down at six o'clock in the morning. He went along the slant drift level and the far rise boards. The bratticing was down, and there had been a fall of roof. After

propping up the roof he came out of the pit. The following morning he again went down the pit and visited the slant level and Briggs' siding, and set men to work there. At midnight he again went down, and assisted in the removal of John Philips and William Maltby from the slant drift to the pit bank.

William Midgley, Ardsley, a night deputy at the Swaithe Colliery, said he was on duty in the pit until six o'clock on the morning of the explosion. Before coming out he saw Allen and all the other day deputies, except Waterworth, for the purpose of making his report to them. There was nothing special to report to them, except to Beevors. His (witness') district was No. 1 at the top side of Briggs' siding. He told Beevors that two men could not get to work until he had got a pair of turn-plates cut for them. These were the two Allen's (brothers), both of whom were dead. He helped to carry out their bodies on the night after the explosion. When he left the pit on the Monday morning there was nothing the matter with it, and he did not hear that an explosion had occurred until about noon the same day. By about five o'clock on the Monday morning he had completed the examination of his district, and he made an entry in the night report book. The entry was—"All the working "places, travelling roads, air courses, and drawing shaft have been carefully examined by five a.m. "North B., No. 4 working place; North E., No. 5; North E., No. 2; South D." Witness explained that he had omitted to insert the word "gas" after "North B., No. 4," and after the other districts mentioned. He also explained that the North E. district and South D. were Sheldon's, and that he wrote them down in his report at Sheldon's request. Sheldon signed the report.

Mr. Mellor stated that the places mentioned in the report were all abandoned places.

Mr. Maule (to witness): Were they all abandoned?—Witness replied that No. 4 was a working place; all the rest were abandoned places.

Mr. Chas. Beevers, colliery manager, Higham Colliery, Dodworth, said he was never in the Swaithe Main until the day of the explosion. He then went down as one of the explorers about four in the afternoon, and the party with whom he was went along the slant drift level. He was in charge of the party, and kept in front. They did not feel the atmosphere very bad until they got to the bottom of the drift. He noticed some broken corves on the slant level, and that one of the cages at the pit bottom was broken. From the bottom to the slant level there were no signs of the explosion having caused any damage. In addition to the broken corves in the slant level, he saw the dead bodies of both men and horses. After going up the slant level about half-way, they retraced their steps, and went into the return air-way. They there found a good deal of after-damp coming through a slit from the benks on the right side, whilst in the return air-way they found the body of Joseph Sheldon, one of the explorers. About five feet off was the body of another man. The lamp was in the man's hand, and was burning. Sheldon's lamp was also in his hand, but it was extinguished, being partly on its side. He then came out, and went down again on Tuesday. On that day they went to the dip side of the slant level, and there found Nettleship. He was lying on his back. Witness heard him speak before he came up to him; he seemed to be conscious of what he was saying. Nettleship was about six yards from his working place. Witness saw that he was badly burnt, and he complained very much when his arms were touched. They gave him a little drop of tea out of a bottle. He wanted to have his own bottle, telling them there was plenty of tea in it; but witness considered it was only wise to give him a little drop, as he had been so long without food. Nettleship did not say how long he had been in the pit, but he told witness and the others that he had been working some of the time. He was then rambling in his talk. Nettleship was found about five on the Tuesday afternoon, and it was after six before he was got to the surface.

The Coroner: You were a long time down?—Witness replied that about two hours elapsed from the time Nettleship was found until he was brought to the surface.

Supt. Sykes said there must be some mistake, as the notes made by the police stated that the man was got out at five o'clock and died at half-past.

The Coroner (to witness): Did you have any conversation with him? Tell us what he said?—Witness: He said he was glad we had come, and that we had been a very long time in finding him. He then asked if we knew how it had happened.

The Coroner: Did he seem to know whether it was an explosion.?—Witness: Oh, he was quite aware what had happened.

The Coroner: Did he see any blaze or smoke?—Witness: He did not say he had seen any blaze.

The Coroner: Did he say he had heard any noise?—Witness: No. He said he did not know where he was for some time.

The Coroner: Then he wanted to know what had happened?—Witness: He wanted to know how it had happened; those were his words. He further said, "You will see there will be no more shooting here."

The Coroner: Was that all he said?—Witness: I asked him if he had been having any shots, and he said no, but he knew that there had been some going on. Witness subsequently came up for the purpose of having a consultation, and he and others afterwards went to the rise-side workings and the slant level. There they found some bodies. In the drift level they discovered after-damp. Up to this time they were unable to see any indications of fire, except that the bodies were burned. He was in the pit again on the Wednesday, and then saw indications of burning in No. 8 neargate. There were soot and black, but it appeared to be the timber which had burned, and not the coal. In No. 8. fargate there was a large fall of coal, which was about 26 yards long, and he could not get over it At this point it looked as if the power of the explosion had spent itself. He did not go down the pit again until the following Tuesday, when he accompanied the Government Inspectors—Mr. Wardell and Mr. Evans—and several other gentlemen. They first went down the engine plane, then into "double three." He noticed the effects of the explosion there, and he described what he saw—doors

blown down, corves broken, and stoppings out. The *débris* was all blown in one direction. In a dip benk in No. 4 fargate, he found a shot with the fuse in it, and ready for firing. There was a large fall at the bottom of No. 4 fargate, the fall consisting of stone, coal, and bind. At the bottom of No. 4 gate there was a shot hole in the coal ready for the powder. There were several indications of the explosion right up to the boundary board, corves being smashed, and the jinny wheel broken, and the *débris* blown in the direction of the return air. The party then returned up the engine plane and went into Briggs' siding. They there found gas (firedamp) coming out of a benk on the dip side, but it was only slight in quantity. He subsequently saw where there had been a "blower." On the following day he again went down the pit with the Government Inspectors, and the remainder of the previous day's party. They first visited the slant drift and the slant drift level. Down the drift incline he noticed that pebbles, coal, and other material had been driven into the timber. They seemed to have come in the direction of the slant drift level. Two corves were smashed to pieces at this point, and the woodwork was blown in the direction of the slant level. In No. 5 fargate (slant drift level) there were severe indications of fire; the props were burnt and charred, and the force of the explosion from this point appeared to have gone both ways. There was a "fall" in the immediate neighbourhood, but it was not of an extensive character, and they had no difficulty in passing over it. There was every indication of the fire having originated at this point. The timber showed that the blast had gone northwards; that is to say, the south side of it was most charred.

By a Juror: He believed there had been two distinct explosions, one in the post between five and six benks in this district (No. 2), and the other in Briggs' siding in No. 4 district.

By Mr. Maule: Whilst going along the "double three," in the drift level, I saw a canister of powder found at the low end of No. 4 benk. It contained about 2 lbs., and was found by Mr. Normansell. Another can was found at the bottom of the incline in No. 3 district, I believe by Mr. Evans. It contained about a pound of powder. I did not see any more canisters of powder found, or any fuses picked up. I have not been able to form an opinion as to where the explosion commenced in the No. 3 district.

Mr. Hopwood: Carry your mind back to the conversation with Nettleship. I understand you to say he said to you, "There will be no more shooting here." Is that the expression he used?—Witness: He said, "You will see there will be no more shooting here."

Mr. Hopwood: Then you asked him if he had been having any shots?—Witness: Yes.

Mr. Hopwood: Then what did he say?—Witness: He said no, he hadn't, but there was some shooting going on. He did not say where the shooting had been going on. I am of opinion that a goaf near Briggs' siding was a likely place for the accumulation of gas; and a goaf in the other district, where I believe the explosion originated, was also a likely place to contain and to give off gas.

By Mr. Mellor: When I came up to Nettleship he could talk sensibly enough, and could converse as well as I can now. I certainly did hear him talking to himself before I got up to him, and I at first thought it was another party of explorers who had come from another district.

By a Juror: From what you have seen of this mine do you think it is a safe one to use powder in?—Witness: I don't believe in any mine in which safety lamps are used that blasting by powder should be allowed.

By Mr. Mellor: No absolutely perfect safety lamp has yet been invented, and if a lamp gets too hot, or if there is a quick current, the gas might light from the lamp itself. Gunpowder is used in many pits up to the present time in this district.

Mr. Mellor: Although in your opinion gunpowder should not be used in mines of this sort, of course accidents may happen irrespective of the use of powder?—Witness: I don't believe this accident has happened from powder, as far as my investigation has gone.—In answer to further questions by the learned counsel, witness explained how it was possible for large escapes of gas to take place without shots having previously been fired.

A Juror: Have you seen anything that has caused the explosion?—Witness: I have only seen indications of the fire; but what has caused the fire I cannot say, and in my opinion no one can say what caused the explosion. My theory is that there have been two explosions; but whether that is so or not I cannot say; perhaps one caused the other.

By Mr. Mellor: I remember an explosion occurring in a mine on a day when only one man was in it, the explosion being caused by some liberated gas coming in contact with the furnace. Powder or some other equivalent power must be used in driving through stone drifts; but it should only be used when the men are out of the pit.

At this stage the inquiry was adjourned until to-morrow (Tuesday). It is said the coroner will not sit after Tuesday evening, and that the inquiry will then be adjourned until the second or third week in January.

Robert Miller, said he lived at Strafford Collieries, near Dodworth, and was a mining engineer and manager. He had not been down Swaithe Main Colliery until the explosion. He first went down shortly before one o'clock on the morning of the explosion. Mr. John Mitchell and some of the deputies had already been in the pit. He went down with Mr. James Wilson, of the Oaks, Joseph Sheldon, deputy, and 15 or 16 men. When they got within about eight feet of the bottom it was "made up" with wreck and water falling down. Broken conductors and broken corves chocked up the bottom, and the occupants of the cage scrambled out over a man's shoulder. The first thing they saw was a man named Crossland, who, when they touched him, said, "You are killing me," and they had to send him out of the pit by main force. He appeared to have been much knocked about, but he did not look as if he had been burned. The party then examined the "returns," and found the separation doors all blown down. They appeared to have been blown inwards. They thought they traced a smell of fire in the north return, and after going in its direction about 20 yards they returned to the pit bottom. After that they all went down the engine plane to the end of the

slant level, and there found a man alive. He was unconscious, and unable to move. His name was Brown, of Stairfoot, and he had since died. They then divided themselves into three parties, under the command of witness, Mr. Wilson, and Jas. Sheldon. Wilson's and witness' party proceeded on Briggs' siding, and Sheldon was to explore the slant level, the drift, and the slant drift level, as far as he could get, because he knew the district. The next day witness saw Sheldon's dead body. After coming out of Briggs' siding, where a large number of dead bodies were found, and 20 yards from the group of bodies, one of the party picked up a human foot, they went down the engine plane, where four more dead bodies were passed. At that time the engine plane was free from after-damp. After going a little way beyond the slant level, they heard a human voice. They listened and found that it was a man screaming. They hurried on towards the sound, and found that it was Pickering, who has since died of his injuries. He was not conscious, and was jammed against the post. He was sent out of the pit. Mr. Wilson, with Schofield, the deputy, and two or three other men then went to No. 3 district, and witness, went along to No. 4 level in No. 3 district up to the drift level. He was accompanied by three or four men. There was a fall of roof which barred the way about half-way through the drift level. They passed several dead bodies and dead horses. When they reached No. 4 level they again met Mr. Wilson's party. Wilson then agreed to go down the engine plane, Briggs' siding, to the boundary board, and witness was to go along the No. 4 level to the boundary board, where both parties were to meet. One of the party was taken ill, and had to be sent out of the pit. Just there was a heavy fall of stone from the roof. In No. 4 level a dead body perfectly naked and badly burned was passed. Two dead bodies of boys beyond him were also burned, as were all the other bodies in that part of the pit. The party then proceeded up the engine plane, where they met a man with an extincteur, who said that Mr. Wilson had discovered fire After again examining the returns he left the pit, after having been in about two and a half hours. Shortly after 3 o'clock witness had a long consultation with Mr. Wardell, Mr. Mitchell, and others, and in the meantime Mr. Wilson and party came out of the pit. He went down again next day, about noon, and was placed in charge of the pit, owing to the illness of Mr. Mitchell, junr. He went to the bottom to see how things were, and then by his advice a number of men were sent down the pit to repair damage, and to search for bodies. He and his party then proceeded to No. 4 drift level. On his way down the drift, he passed a broken lamp, which had been picked up and hung on a prop. There was no fall near where the lamp was hanging, nor did he find any marks of fire on the prop. The bodies were 20 yards away from the place where the broken lamp was found. There was a small quantity of after-damp. In the first benk in No. 4 level they found a man without his shirt, badly injured. A shot had been fired in that place, but it had only partly blown down the coals. They satisfied themselves that after the shot had been fired a corve had been loaded with coal. The man's lamp was found the following day covered over with coal, but it was not broken. Mr. Beaumont, one of the party was taken ill, and witness and his party left the pit. On Wednesday, witness went down the pit several times to give orders, but he did not go far away. Messrs. Thompson and Pearson brought to him a can of powder which had been found in Eyre's place in No. 4 level. They found two dead bodies lying near the gate, and a heavy fall of roof had occurred close to them. They got over the fall, and examined the place beyond it, and they found another fall almost connected with the first. They got over that, and found at the other edge a corf driven into the fall and a dead body, face forward, driven in after the corve, and another body a few yards off, which had apparently been driven from the goaf. The face had been driven violently against a rail, and was completely smashed in, and it was apparent that that blow had been fatal. When they reached the right side they saw several props lying about, and two other bodies of wood-takers, and they came to the conclusion that the men had been taking props out of the goaf, and that in consequence a heavy fall had occurred. The bodies of the two wood-takers were found about 20 yards from the goaf, in the board. On making their way to the pit bottom, they particularly observed which way the blast had gone. They came to the conclusion that the blast came out of the goaf, as if that had been the centre, and then it had taken two directions.

Mr. James Wilson, resident manager at the Oaks Collieries, and living at Stairfoot, said that he had been in the Swaithe Colliery once previously to the explosion. He went down the pit after the explosion at half-past twelve o'clock. In addition to the evidence given by the last witness, with whom Mr. Wilson acted, he said that when he saw Sheldon at the junction of double threes he was suffering from after-damp and appeared to be very excited. He said, "It is very hard; my only son is in the pit, and I expect he is dead." A note came later on for Sheldon stating that his son had got home, but when it arrived Sheldon was dead. He left Mr. Wilson and proceeded down the double threes. In the part of the pit which he had under his charge for exploration there was very little sign of the explosion. Going along Briggs' siding in No. 1 dip board they saw a fire burning right into the root of the coal. It was put out. It had been caused by something burning on the ground, either colliers' clothes or bratticing cloth. It was six inches by four in extent. Going lower down the siding towards the slit he found that some more burning cloth had been blown into the crevice of the floor, where there was a small "feeler" of gas burning, which fire was also put out. The crevice was 18 inches deep, and it was no uncommon circumstance for the floor to divide in that way in the Barnsley bed. On reaching the back part of Briggs' siding the presence of after-damp began to be felt. They went along the jinny, and then met two men with the fire-engine, and they took it to the place where the fires had been discovered, and cooled the places. Witness then left the pit. On the Tuesday following he went down the pit with Mr. Jeffcock, mining engineer, of Sheffield. The scene of the explosion appeared to have been between four and five benk in the slant drift level. It appeared as if it had divided, and gone in all directions. Witness went down on Wednesday and Thursday with Mr. Miller.

Mr. Philip Casey, the managing director of the Shirland Collieries, said he was down the Swaithe Main Colliery from five o'clock until half-past nine on the evening of the explosion with a party of

explorers. They went into the slant drift level, and found that the force of the explosion had been very great. Corves were blown about, and he saw a number of dead bodies. He had been down twice since; once on the 14th December, and the second time on Tuesday last. On the latter occasion he was accompanied by Mr. John Mitchell and two men. They went into Akers' place and examined it very carefully. He saw that the whole of the face had come down, and brought the stone with it. It had been "holed" to a good depth. They examined the place very carefully to find traces of a shot having been fired, but could not find the slightest marks to indicate anything of the kind. And if Akers had been firing a shot, his body would not have been found in the position in which it was. If a shot had been fired, the roof would have been detached from the stone. There were traces of an explosion before they came to Akers' place, and it appeared as if the blast had gone along the level towards his bank. At the top of the slant drift the explosion had been very severe, and the bricks of the stoppings had been blown in the direction of Akers' place.

By Mr. Maule: He had had 14 years' practical experience as a miner, but he had not seen an explosion on so large a scale before. He believed that it originated in the No. 1 dip board in the slant drift level. He found symptoms of fire throughout the level, and in all the gates running off it. They could see traces of the explosion in all parts of Briggs' sidings, but it had not originated there.

By Mr. Hopwood: He thought that if the blast, after travelling from the slant drift, found any gas or anything to feed itself upon in Briggs' sidings, a second explosion might have taken place; but if that had been the case, the explosion would have been seen and heard at the pit top. There was no evidence of any second explosion. The explosion had not originated in a twelve-acre goaf which was near the slant drift. He was certain it had occurred in the slant drift level, because there the men were very much burnt, and the workings were blown about.

Mr. Hopwood: Have you formed any opinion as to the cause of the explosion?

Mr. Casey: No, I have been unable to do that.

Mr. Hopwood: What do you think about the use of powder in a mine of this kind?

Mr. Casey: I don't approve of powder being used anywhere where lamps are used. I think if it is not safe to work with naked lights, it is not safe to fire a shot and send yards of flame to do the very thing you keep a lamp to prevent.

By Mr. Mellor: They did not find much air in the mine in consequence of the stoppings being blown out.

By Mr. Rhodes: If there had been two explosions together, and they had been so to speak merged into one, there would not necessarily have been indications of both at the pit top.

Mr. John Mitchell, the certificated manager of the Edmunds and Swaithe Main Collieries, said he had had the entire management of the colliery for the last three years, and was there four years before that time. The method of working the colliery was the one generally adopted in the Barnsley district. About 380 men and boys were employed in the Swaithe Colliery underground. The number of men and boys who went down the colliery on the morning of the 6th was 244, and five came out before the explosion. The numbers were ascertained by the banksman chalking them at the top, and the hanger-on checking him at the bottom. The report of the numbers was usually given to the under-viewer, James Allen, but he was killed in the explosion. Allen had been at the colliery about four years, and was always very attentive to his duties. He (Mr. Mitchell) went down the pit three or four times a week at least, and very often every day. The Coroner: Was powder used in the pit by your authority?—Mr. Mitchell: Yes; anywhere but in the slant drift level, on the other side the fault. Continuing, the witness said he heard the explosion. He had just gone to the pit, and was near the offices. He heard a noise as if there had been a collision of coal trucks. He ran down into the pit yard and saw Wm. Bellamy, the enginewright, with whom he went up on the pit bank. The smoke which had come up the pit shaft was clearing away, but from the cupola a larger volume of smoke than usual was issuing. He tried to get down the shaft, but was unable to do so, because one of the cages was stuck fast in the shaft. He ordered one rope to be uncoupled, and, that having been done, the rope was fastened across the pit top by a flange. He then went down the shaft, and was accompanied by William Bellamy and Joseph Sheldon. They found no damage done in the shaft until they got to the bottom, and there they found the conductors broken up to a level with the top of the perch. At the bottom there were about 20 men, several of whom were injured, waiting to get into the cage. There were also three bodies. One man, George Linford, was lying under the fastened cage, but he had survived. The men were sent up the shaft, and he soon afterwards followed them. He went down again with an exploring party, about half-past nine o'clock at night. By Mr. Maule: The pit was divided into four districts, and in the daytime there was a deputy in charge of each. Every day deputy was in the pit eight hours, and visited each working place twice. At night there were only two deputies in the pit, and they only made their rounds once. On Sunday night, the 5th ult., two deputies, Joseph Sheldon and William Midgley, went down the pit at 12 o'clock and made an examination of the colliery ready for the men to go in at six o'clock. The practice of the deputies was to enter the result of their examination in a book, and if everything was right they "signalled" the men down. If anything special occurred the deputies reported to him. No communication was made to him either on Friday or Saturday mornings to the effect that there was gas in the pit. The use of powder was prohibited in the slant drift level, except in cases of necessity, such, for instance, as the hardness of the coal. Then a deputy might fire a shot between two o'clock in the afternoon, when the men left work, and six o'clock the next morning.

It was now half-past five o'clock, and the Court decided to adjourn until yesterday.

Mr. John Mitchell's examination resumed. In reply to questions by Mr. Maule, he said: An abandoned place means a place which has been worked out. The miners could get the powder for blasting where they liked. They could not absolutely prevent a man taking more than four lbs. of

powder into the pit. The deputies, as a rule, ascertain whether a miner has a can that will hold more than four lbs. of powder or not. If gas has been found in the pit within three months the rule provides that powder shall not be taken in the pit except in cartridges, but they had no means of ascertaining who takes the cartridges into the mine. In the slant drift level shot firing was prohibited until after two o'clock, but it took place in other parts of the mine during working hours, subject to the control of the deputies. The intake of fresh air into the mine was 76,630 cubic feet per minute. By Mr. Hopwood: Before I was certificated I was assistant manager in the mine. I am 30 years of age, and son of one of the proprietors. I have no interest whatever in the mine except as certificated manager. The mid-day shift ends at two o'clock. About 25 men go down the pit at half-past one. Mr. Hopwood: Is that in your opinion consistent with Rule 8, that persons ordinarily employed in the mine should be out of it at the time of shooting?—Mr. Rhodes: Excuse me, sir, you are referring to a rule which does not exist, so far as this inquiry is concerned. Witness: Not if they were going into the part prohibited. I take the words "out of the mine," to mean out of the part prohibited. If a shot was to be fired in a deputy's district, the whole of the men working in that district would be withdrawn. Supposing a shot was to be fired on the confines of both districts, the men in both districts would be withdrawn. By Mr. Mellor: Allen had been underviewer of this mine for four years, and was in my opinion an able and efficient man. Not only myself and the proprietors, but the men had confidence in him. He had the general supervision of the workings. The deputies were persons in whom I and the proprietors, and also the men, had confidence, and they were efficient men. The night deputies examined each workman's place, and if there was anything the matter they told the men working in that particular place. It was Fletcher's duty to have reported the gas if he found any, but it was not until it had gone that he mentioned it to anyone. When I was away in London for a day or two, Allen and the deputies had charge of the mine, but if I have been away for longer than that, my brother, Mr. Joseph Mitchell, mining engineer, has acted in my place. By Mr. Rhodes: The night deputies examined each workman's lamp before he went into the pit, and if they found a man in possession of anything that he ought not to take into the mine they would stop him. The workmen are allowed to inspect the Gas Report Book at all reasonable hours, and also, if they choose, the workmen may at intervals of not less than a month make an inspection of the mine on behalf of themselves. By a Juryman: That rule has been carried out on two occasions at the Swaithe Main Pit, but not for some time. By Mr. Maule: The manager appoints the deputies. By the Coroner: I know that a boy named John Waller worked at the place with another boy named Gibson as his "nipper." By Mr. Maule: I don't recollect any of the working men waiting upon me and requesting me to put an end to blasting. I can recollect many times being asked to let them blast. I wouldn't say that they never asked me to stop blasting, but I don't think they have ever done so.

Joseph Frederick Thompson said: I live at Wath, and am the general manager of the Manvers Main Colliery. I have been down the Swaithe Main Colliery twice since the explosion, but not before. The first time I went down was early on the Tuesday morning after the accident. I went into the slant level and up the slant drift to the No. 7 fargate, where we were stopped by the after-damp The explosion seemed to have come with a terrific force down the drift. We got the horse-keeper and another young man out. I went down again on Wednesday, the 8th, at twelve o'clock. We went along the No. 4 level in No. 3 district, and found a man near the pump there. I think his name was Edward E. Glover. His lamp was No. 41, and his mottoes were No. 90.—By Mr. Maule: I did not see anything that would lead me to discover the place where the explosion originated. I have had about 21 years' experience in the management and the ventilation of mines. We are always supposed to try and ventilate goafs as far as we can, and let any gases that might accumulate have any chance of getting out. You cannot ventilate a goaf properly. We have practised shot firing at Manvers' Main Pit until this explosion, but we have now left it off. I daresay the men started that idea, but I started before them.—By Mr. Badger: I am of opinion that there have been two distinct explosions, and from what I have seen I should think the first originated in the slant drift level.—By Mr. Hopwood: There was a very good ventilation in the pit when I was there.—By Mr. Mellor: In our mine we use the Clanny lamps throughout the pit.

John Gerrard, inspector of mines, said he had acted as assistant inspector in this district for two years. He read an exhaustive report, in which he described his visits to the Swaithe Main Pit, and the condition of the workings after the explosion. He found the damage and loss of life to be confined to the lower or dip side of the shafts. There were three localities where evidence of violent explosion and heat were to be found, viz., the north slant drift level, No. 4 levels, south, and Briggs' south level. He had no hesitation in saying that a shot was not fired in Akers' working place on the day of the explosion, and that therefore the explosion did not originate from a shot in that place. It was his opinion that an explosion originated in the north slant drift level—in the dip side places, somewhere between No. 4 and No. 8 banks. The blast set in motion split in the level, one portion spending itself with much force in the rise boards, and the other sweeping down the drift, at the bottom of which it divided, and passed along the three roads to the engine plane. The impetus it had gained then carried it forward to Briggs' level, and the gas, which was known to be in the goaf there, was then added to the blast, which passed through the goaf to the outlet, where the woodmen were at work. At No. 4 level the blast split again, the main force passing into the boundary board up to Briggs' level, and joining the blast which had travelled along Brigg's level up the boundary board, and the jinny to the air crossing, which was broken down, and thus out by the up-cast and down-cast shafts. In the absence of evidence of direct communication of flame to the gas to cause the explosion, as for instance a shot or naked light, they were left to surmise as to the origin of the disaster. It might have proceeded from a defective lamp being taken into gas, or from gas being thrown on to a perfect lamp at such a velocity as to pass the flame. That the lamps used by the deputies or fire triers for shot lighting were defective

was his decided opinion. It was an undoubted fact that gas was known to exist in the mine, and in each of the three localities which were affected by the explosion, and this for days previous to the explosion.

Mr. F. N. Wardell, Her Majesty's inspector of mines for the district, read a report, which showed the steps which were taken to restore the ventilation of the mine after the explosion, and to recover the bodies. Upon ascertaining the character and extent of the calamity, he communicated immediately with the Secretary of State, who at once directed that his colleague, Mr. Evans, should assist him in his investigations, and further instructed Mr. Maule, Q.C., to attend the inquest, and watch the proceedings on behalf of the Government; and he was personally very greatly indebted to both these gentlemen for the most valuable and painstaking assistance they had rendered. It was the expressed wish and earnest desire of the Secretary of State, as it was of all concerned, that the inquiry should be most searching and full, that every fact might be eliminated which even in the smallest degree might help to ensure a complete and thorough investigation into the causes of this calamity, and that the result elicited might be the means of indicating some line of action which would at all events tend to lessen the recurrence of these terrible and deplorable misfortunes. The restoration of the ventilation to a sufficient extent to admit of an examination being made of the pit was a work of some considerable time. Explosive gas and after-damp had both to be fought against inch by inch, the bodies of the men and the horses being sent out at the same time; but as soon as ever it was practicable, Mr. Evans, Mr. Gerrard, and himself, in company with the manager and others, made an inspection. This inspection was confined to the dip workings, or that part of the mine shown on the plan before them, and he had only therefore to direct their attention to this locality, leaving out the workings between Swaithe and Edmunds Main shafts as having been unaffected, and as having in no way participated in any cause which might have led to the explosion. In his opinion the explosion originally took place in the slant drift level district, in the dip workings, somewhere between Nos. 4 and 8 banks. From No. 8 fargate in an "in-bye" direction, indications of the explosion were less manifest, and apparently the force of the blast in that direction had here expended itself. He thought it passed up No. 8 neargate, and possibly one or two other gates, dividing itself at the level, and going both straight across to the faces of the rise workings and along it outwards, rushing down the drift, and so straight to Briggs' siding, where another and most violent explosion seems to have taken place. From this point the apparent course was upwards to the boundary board, and also through the large twelve-acre goaf, to the low workings in No. 4 level and No. 4 drift level, where very considerable damage has been done. The direction taken along the boundary board has been to the overthrow described by some of the witnesses, which was blown down; and hence the blast traversed through the stables to the down-cast shaft, doing considerable injury at the pit bottom to the cages and conductors. There were very strong evidences that the explosion originated in the district he had described. From a certain point on the slant drift level everything was blown towards the engine plane, whilst men and horses throughout the entire distance were more or less burned. Within the confined limits of the drift, where a greater concentration of the force would exist, there was evidence of extreme violence, and pointing in the same direction. The timber in and near the bottom of this drift was completely riddled on the "in-bye" side with small stones and coal, some of which were driven into the wood. On the "out-bye" side no extraordinary appearance presented itself. He thought that if the explosion had originally occurred, as suggested by one or two of the witnesses, at the top of the twelve-acre goaf, and the flame had then proceeded thence along the slant level, indications of violence would have been traceable on the "out-bye" side of the timber; it seemed also unnatural and improbable to suppose that the flame should have travelled down to the bottom of the dip board gates in the slant level district without igniting gas at the top of the goaves; and it must be borne in mind that in this slant drift level, distinct orders had been given that no powder should be used whilst the men were at work, thereby indicating that it required the adoption of special and extra measures of precaution. To discover how the gas ignited or the actual place of ignition did not seem to him to be of such importance as to ascertain how or why gas came to exist there. All this must be a matter of speculation and opinion. It was, of course, possible that, owing to falls or other causes, a large body of gas might have been liberated, and driven with such a velocity as to fire at a so-called perfect safety lamp. It was equally possible, if the goaves contained gas, to account for the explosion by its displacement onto a naked light, which naked light might have been a defective safety lamp; and that gas existed in different parts of the mine during some weeks preceding the disaster, the report books, as well as the evidence, conclusively prove. With regard to the ventilation of the dip workings of this mine, the distribution of the air should be so arranged that each district might have apportioned to it a separate split of fresh air. As the air was at present conducted, any gases given off and mixed with it in No. 5 must pass through the working places in No. 3, and similarly in No. 2 district with respect to the slant level, and the slant drift level workings. He felt it his duty to make the following observations with respect to the general discipline of the mine. In the first place the 8th General Rule of the Coal Mines Regulation Act, 1872, expressly enjoined that during three months after any inflammable gas has been found in a mine, powder shall not be taken into, or be in the possession of any person in any mine, except in cartridges. And yet, though gas had been reported here for some time previous to the explosion, powder was taken into the mine loose in canisters. Although his opinion with respect to the use of powder was well known, and had been often repeated, still if powder actually was allowed to be used in this mine, there ought to have been the most stringent regulations in force respecting it. He referred more particularly now to the fact that colliers were able to and did purchase powder in the town or elsewhere, and this, apparently, without any account being kept by those in authority of the amount thus introduced into the workings. Feeling so strongly as he did on the question of the use of powder in the Barnsley and Silkstone seams, he could not but advert once again to it.

Whether or no it had in this instance primarily led to the explosion—and in his opinion it had not—still the all importance of the subject was self evident. It was marvellous to him that owners and managers would in mines where it was considered necessary to use locked safety lamps incur the responsibility of allowing powder to be introduced. The firing of a shot meant a naked light, and one too of the most dangerous character. In the thick Barnsley seam surely powder could not be a necessity. Reasons which might induce its adoption in a thin seam have no application here; and it really seemed to him to be purely a matter of arrangement between masters and men. Special exceptions might be made in the driving of stone drifts, but even then the firing should only be allowed when the workmen generally were out of the mine. He thought it most important that a careful examination of the mine should be made before the workmen descended, and such was enjoined by the 5th General and 9th and 11th Special Rules. These rules did not appear to him to have been rigidly enforced, for it seemed that in some instances the workmen proceeded to their work with the deputies. It was his opinion also that the districts assigned to some of the deputies were too large. It was quite impossible that such a careful examination of the mine as was absolutely necessary, could be made when it must almost take the person upon whom the responsibie duty devolved the whole of his time simply to walk round his district. As regarded abandoned places, and the ventilation of such, he would simply call their attention to the case of Brough *v.* Humfrey, when it was decided that so much of the mine should be ventilated as might operate on the working places. It was not enough only to ventilate the travelling roads and working places of a mine. In conclusion, Mr. Wardell thanked the colliery proprietors, Superintendent Sykes, and all concerned, for the manner in which they had assisted him in the investigation.

Mr. Mellor also wished to express, on behalf of the colliery proprietors and manager, the most sincere thanks and great admiration they felt for the noble conduct of the volunteers, and to express the deep feeling of sorrow that to their exertions two valuable lives had been sacrificed.

Thomas Evans said: I live at Derby and am inspector of mines for the Midland district. I arrived at Swaithe Main on December 7th. I have heard the evidence of Mr. Wardell and Mr. Gerrard. I went down the pit on the 13th and 14th of December and took a close survey of the workings on the dip sidings. I have heard the evidence given during the whole of this inquiry, and agree generally with the evidence given by Mr. Gerrard and Mr. Wardell. I feel tolerably certain that the first explosion took place somewhere in the slant drift level workings, and that the second explosion took place at the top of Briggs' siding. How the gas ignited it is impossible to tell. I think the important questions to be inquired into are where and why did the gas accumulate? The twelve-acre goaf and some others were known to contain gas, and the gas escaping from these goafs passed into the workings, both above the twelve-acre goaf and in the slant drift level. In my opinion allowing people to work in this fiery Barnsley seam in this colliery, along the edges of a goaf giving off gas, is attended with considerable danger. I do not want to confine my observations particularly to this colliery, because I believe it is the practice of working the collieries in the district, and I disapprove of the system. I think it is impossible that these goafs can be ventilated, and any gas that is given off must of necessity pass into the workings. The gas accumulates in the goafs where there is no air in them. I don't think the short glass Stephenson lamp is as safe as a long one.

The Summing up.

The Coroner said before he proceeded to make any remarks on the evidence that had been given respecting the unfortunate people who had come to their deaths, he must ask the gentlemen of the jury to join with him in thanking the counsel and other legal gentlemen who had so ably and so thoroughly brought before their notice the circumstances connected with this awful calamity. He thought they ought also to thank the police, who had very arduous duties to perform because they more than anyone else knew what was required, and they had to get things for their convenience and for the proper elucidation of the facts, and he thought they had done so in a thorough and efficient manner. He then read the law which bears on the management of coal mines similar to the Swaithe Main Pit. In reference to gas and blasting it appeared that in cases where gas had been found blasting was not to be carried on until the workmen were withdrawn from the pit, or from that particular part of it. So far as the evidence was concerned after they had heard the very lucid and explanatory evidence given by Mr. Gerrard and Mr. Wardell, and with which Mr. Evans agrees, it would be presumption on his part to begin to trouble them with any remarks of his about it. He then said that out of 143 unfortunate people who had come to their deaths there were different classes. The majority of them met their deaths on the 6th instant, in the pit, either by the explosion or by suffocation, and some were brought out alive and died afterwards, but he thought he might include them altogether. He then referred to the few instances in which lucifer matches had been found on the bodies, and said he must leave it to the jury to say whether anyone was answerable or not, and whether the rules might have been more rigidly carried out or not.

Verdict.

The jury retired to consider their verdict at a quarter past six o'clock, and returned at a quarter past eight with the following verdict:—"The jury find that Thomas Blackburn, James Allen, and "others, came to their deaths at Swaithe Main Colliery by an explosion or explosions of firedamp, but "how such explosion or explosions originated there is not sufficient evidence to show; we are likewise "of opinion that according to the evidence the Swaithe Main Colliery is a fiery mine, and that the "general and special rules have not been rigidly carried out, and that gunpowder has been recklessly

" used. The jury are also of opinion that in all mines where safety lamps are used the use of gunpowder " should not be allowed except in stone drifts, and there only after all the miners are drawn out. The " jury desire the coroner to forward this opinion to the Secretary of State. We also regret that the " miners have not carried out General Rule 30, and think that this rule should be strictly adhered to."

The Coroner said he thought they ought to express their thanks to the Mayor of Barnsley, who had personally superintended their comforts by having the place properly ventilated and warmed.

The jury were then discharged.

The effects of the shock caused by the first explosion had not worn off, when another, fortunately attended by much less loss of life, though still of alarming extent, occurred at Methley Junction Colliery, near Normanton, the property of Messrs. H. Briggs, Son, & Co. This accident was the more unexpected, from the fact that it took place in a portion of the district which had been comparatively free from similar disasters. I regret to say that in this case six persons were killed.

I made an examination of the colliery on the day following the explosion. The seam being worked is the "Haigh Moor," at a depth of 135 yards. Ventilation is obtained by means of a fan 36 feet in diameter, and the Report Book indicated a total of 55,000 cubic feet of air per minute, traversing the mine at the time of the last measurement preceding the accident. The portion of the colliery wherein the explosion happened is called No. 4 South Ending, and here five benks were being worked, giving employment to 26 men and boys. From the shaft to the face of No. 5 benk (where, I am of opinion, the gas ignited) is a distance of more than a mile. Beyond the fifth benk gate the endings extended about 100 yards, as shown on the accompanying plan. Five persons working in these endings were killed, a deputy who was visiting them being the sixth. None of the men working in the benks appear to have been injured. Only two of the four deceased were burnt, and they very slightly, death having been caused in each case by after-damp.

The effects of the explosion were discernible over a very limited area, and considering the short distance these men would have had to travel before reaching the fresh air, it seems strange that the loss of life should have been so large.

The indications all pointed to the top of No. 5 benk gate as the place where the gas ignited. The deputy appears to have visited No. 5 benk shortly before the explosion, and at that time there was no evidence of the roof being "on the weight," but almost immediately afterwards signs of weighting were apparent, and the men working there, in obedience to directions, came away from the face to wait until the fall had taken place. My opinion is that either one or more of the candles (naked lights were partly in use at the time) was by misadventure left behind, and so the gas, liberated by the fall, was ignited, since the explosion occurred immediately after the fall. The man in the ending nearest to No. 5 benk was working with a lamp, and this was found locked and in perfect order, without any sign of the gas having become ignited at it. A very short time elapsed before the bodies were recovered and ventilation restored. Safety lamps were used in the endings in the mornings, but candles were substituted later in the day. Pending any further recommendation as to the exclusive use of safety lamps in the pit, I strongly advised the discontinuance of this iniquitous system of intermingled lights, and the adoption, in this portion of the mine, of safety lamps alone.

A remarkable accident at Gawthorpe Colliery, near Wakefield, the property of Messrs. G. & J. Haigh, on 8th January, resulted in the death of one man from suffocation. On the morning in question two brattice sheets got on fire by some means. It could never be positively shown how the fire originated, but as candles were used through the pit, it is not improbable that a hurrier, while passing under the sheets with his tub, may have ignited them; this is the more likely since the candle is occasionally carried affixed to the side of the tub. The fire communicated with the coal and was not extinguished until the next day. Immediately the deputy in charge of the pit heard of the fire he sent round and ordered all the men out of the pit, with the exception of those whom he required to assist in putting out the fire and restoring the ventilation. Unfortunately a man named Richard Oldroyd, who worked in a benk some fifty yards from the horse level, the last man on that side to whom the air travelled, was unable to get out. The smoke prevented him, and although every effort was made to rescue him by breaking down a stopping which was built between his benk and that next to it, he was suffocated before he could be reached. The ventilation in the pit was fortunately good, and all danger from gas coming in contact with the fire was happily avoided. The man Oldroyd was deaf. I do not think this in any way helped to bring about his death; but I think it a mistake to allow persons so afflicted to enter a mine.

Robert Adams, a collier working at the Rosa Pit, near Barnsley, belonging to W. Day, Esq., met with an accident on 27th February from a fall of clay-seam dirt. He had finished his work, and it was the last day that he was to be employed there. Having put up his tools he went out of his working place, but stopped at the adjoining one, where he remarked

to a man named Walton, who was filling a corf, "I'll get you this corner off." Walton told him not to do so, and left the place with his corf. Adams had then apparently gone to the face to carry out what seems to have been simply a good-natured intention (although he was transgressing the rules by being in any other working place than his own), and while there a quantity of the clay-seam dirt fell upon him. He was so severely crushed that he died a fortnight afterwards.

On 10th April a man named W. Walker was killed at Gomersal Main Colliery, near Leeds, belonging to Messrs. T. C. Taylor and Cox, under the following circumstances:—He was the engineman, having charge both of the winding and pumping engines, the latter pumping water from the up-cast shaft, situated close to the drawing shaft. Having gone to start the pumping engine about 1 o'clock in the day he was seen standing at the open door in the up-cast chimney with a bucket in his hand; after this he was missed, and on search being made was found lying at the bottom of the shaft dead. The supposition is that the pump required priming, and for this purpose he had opened the door into the shaft, when by some mischance he fell while so engaged. It is an unsafe method to prime the pumps in this manner, but apparently it had been the regular custom here, and Walker was probably only doing what he had repeatedly done before, and up to this time with safety.

William Stanley, a sinker, lost his life at the Hoyland Silkstone Colliery, near Barnsley, on 15th May. A shaft of the enormous diameter of 20 feet is here being sunk to the Silkstone Seam, and it was in connection with this work that the accident occurred. The engineman lowered an empty trunk with such speed that it struck Stanley at the bottom of the shaft, killing him on the spot. The engines used for sinking are very large and powerful, and one stroke causes the trunk to ascend or descend 20 yards. With such machinery as this the very greatest care is requisite in a sinking shaft. One of the rules states that a distinct signal shall be given to the sinkers in the bottom when the descending tub is six yards from the bottom. In order to work with greater safety, according to the opinion of the manager, there was a mark on the indicator which fixed the place where the engine was to stop for the purpose of allowing a signal to be given to the men at 20 yards from the bottom. The rules with regard to signalling did not appear to me to be enforced at this colliery with all the rigour their importance demands, though I cannot say that this accident was the result of such laxity. Nevertheless I brought the subject before the manager and obtained his promise that the rules should be strictly observed for the future. With engines of such power, and capable of uncoiling so many yards of rope by a single revolution, it does not seem difficult to account for the trunk descending so rapidly into the bottom of the shaft, as it did in this instance.

A young man named Thomas Willey was so seriously injured in the Aldwarke Main Colliery on 5th July that he died 10 days afterwards. He was a labourer, and was engaged with others in removing dirt from a new road which had been made to straighten the engine plane. As Willey was crossing the plane he put his foot on one of the wheels by which the endless rope is carried round a curve which exists there, and his leg being drawn under the rail which crosses the wheel serious injury was inflicted. The wheel had been in this position for seven or eight years; it was not open-spoked, but solid. The man knew it was there, could hear it moving round, was especially told about it, and had with him a light.

A shocking accident, resulting in the deaths of two men, occurred on 30th July at a shaft which is being sunk by the Industrial Coal Co. at Woodhouse Junction, near Sheffield. Five sinkers were at work in the bottom of the shaft, and four holes had been drilled. Three of these were charged ready for firing, and while the chargeman was charging the fourth he looked round and saw that the fuse attached to one of the charged shots was ignited. The trunk was suspended a few feet above them, and they instantly shouted for it to be lowered, and when this was done they all rushed into it and signalled to be drawn up. This was done at once, the trunk swinging from side to side, time not having been given to steady it. In ascending the shaft it caught against a beam, and two unfortunate men, Owen Jones and W. Frost, were thrown out and fell to the bottom just at the time the shot fired. Jones was killed at once, and Frost died the same night. Both men were horribly mutilated. The shaft is 16 ft. 6 in. in diameter, and sunk to a depth of 90 yards, the beam against which the trunk caught being 17 or 18 feet from the bottom. The chargeman said that when he looked round, as I have described, Jones was trying to put out the fuse, and he was under the impression that he (Jones) must have lighted it; but how, neither the chargeman nor any of the others could tell. If they could have preserved their presence of mind, I do not think the accident would have happened, as there was a length of four feet of fuse, and before this had run there was ample time to have got away. The custom here had also been to fire four or five shots at the same time, which I do not consider a very safe practice, as with fuses of the same length, and the shots going off together, it is quite impossible sometimes to tell

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METHLEY JUNCTION COLLIERY

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REFERENCE.

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Doors Blown out D

Stoppings

Stoppings Blown out

Where bodies were found

Places where the men were at work

Brattice Sheets ... S

" " *Blown down*

Frank N. Wardell

Scale 2 Chains to the inch.

whether one or more has missed fire. On occasions within my experience where the sinkers have returned to the bottom of the shaft after firing shots, one which had missed fire has then gone off with serious and fatal consequences. Another dangerous practice is to warm or dry the fuse, after the shot is charged, with the flame of the candle, and it is highly probable that Jones may have been doing this when the fuse became ignited. The catching of the trunk against the beam was of course due to the unsteady way in which it was started from the bottom. This beam only projected about three feet from the side of the shaft, and in the ordinary course of working there was ample room for the trunk to ascend and descend steadily without coming near it.

An accident occurred at one of the pits belonging to the West Yorkshire Iron and Coal Co., on 24th October, at West Ardsley, which resulted in the death of N. Fletcher, on 23rd November. This man attended a donkey-engine in the pit and on the above day, a Sunday, was coming out to get his dinner, when by some means the cage crushed him against the conductor in leaving the bottom of the shaft. I could not ascertain that blame was attributable to any person in this case.

On 2nd November a man named Shaw was killed in the Norfolk Colliery, Thorncliffe, belonging to Messrs. Newton, Chambers, & Co., under the following circumstances. The deceased and another man were engaged at the bottom of an incline assisting masons who were building an arch. A man named Cowood was attending to the signalling. Finding that some empty corves were required in a district branching from this same incline, Cowood went to tell the hanger-on, Pitchford, to send some down. From the evidence I was able to gather, that in starting these corves from the bank head, Pitchford had allowed the rope to receive a severe jerk, sufficient indeed to break it, and the corves proceeded amain down the incline. Cowood, hearing the corves coming, and guessing from the extra noise that something was wrong, stepped aside into a refuge hole. The deceased and a man named Hart were carrying a piece of timber, and Cowood called to them to get out of the way. Hart ran some 18 yards further down and got into another refuge hole, but the deceased was caught by the corves, run over, and killed. It was shown at the inquest that there was some mortar in the refuge hole, but whether sufficient to have prevented Shaw from also finding shelter there was not made out. It did not appear, besides, that the poor fellow had attempted to get in. The mortar had probably been put there by the masons or their labourers while they were engaged in building the arch, but of course this ought never to have been done. The refuge holes should at all times be kept perfectly clear and open.

About 11 p.m. on 18th November the head-gear at the Glass Houghton Colliery, near Pontefract, belonging to J. D. Thorp, Esq., took fire, and although most providentially the men were rescued from the pit, yet I mention the circumstance of the fire here, because it indirectly brought about a fatal accident two days later, by which two men lost their lives. It so happened that at the time the head-gear caught fire, the wind was blowing almost a gale, and though every exertion was made, and volunteers and fire brigades were quickly on the spot, everything inflammable in the vicinity of the shaft was destroyed. There was the utmost anxiety for the safety of those in the mine, 70 or 80 men and boys having descended an hour before the flames burst out. Of course volumes of smoke were being carried down the down-cast shaft instead of the ordinary pure air, and all means of communication by this shaft were speedily cut off. It required the most strenuous efforts to prevent the flames extending to the up-cast, which was not many yards distant. A rope was as quickly as possible affixed here, and an attempt made to descend the shaft, but the three deputies who made the trial had to be drawn up before they had gone many yards, completely overcome by the heat and smoke. Efforts were redoubled to subdue the fire, and these towards morning were successful. Then a lamp was lowered to the bottom of the up-cast, with a note, asking if the men were all right. In a quarter of an hour, during which the suspense of all on the surface was fearful, the cage was drawn up again, and a note found in a powder-can to the effect that all were alive, though much overcome by the smoke. All were eventually drawn out of the pit after an imprisonment of some 10 hours, and though many were unconscious and seriously ill afterwards, no death ensued. Had the flames once got to the up-cast both means of communication would have been cut off, and I do not think anything could have saved the lives of the men. As it was, the whole of the head-gearing, scaffolding, and screens were destroyed, and the men working at the colliery thrown out of employment.

Unfortunately, I have to add that two men lost their lives indirectly through the fire. John Holt and W. Howson, furnaceman and horse-keeper, were descending the up-cast shaft on the day following the fire, when by some means the cage was lowered into the sump, and both men were killed. There was a great deal of contradictory evidence given at the inquest by the engineman, banksman, and hanger-on, so that it was almost impossible to ascertain how the mistake arose. On the one side it was said that on the signal to stop being given,

the cage descended very quickly, and striking the covering at the shaft bottom, rebounded and fell over into the sump. On the other side, the engineman gave directly opposite evidence. The jury, however, eventually returned such a verdict as to cause the engineman to be committed for trial for manslaughter.

I am of opinion that the scaffolding which was over the sump was not sufficient. It was in four portions, resting loosely on beams, not fastened, whereas it ought to have covered the whole space of the shaft, and been fastened down. On the other hand, this shaft was not used regularly for drawing men out, but simply for purposes of ventilation. It had only been used to get out the men in a trying emergency, and with the utmost possible despatch.

A shaft accident occurred on 7th December, at the Brag Lane Ends Pit, near Wakefield, the property of Messrs. R. Hudson & Co., causing the death of a young man named Charles Firth. He was employed as a labourer to fill water into tubs at the pit bottom. The chargeman, R. Stringer, and two others, were engaged on the above date in emptying water out of the sump, and had taken off some of the planks forming the scaffolding. Firth had to go up the shaft about five o'clock in the afternoon, and got into the bucket to do so. This was allowed to ascend without having been first properly steadied. The consequence was that the bucket knocked against the side of the shaft, and the banksman, seeing the rope oscillating, signalled the engineman to stop. This he did, but unfortunately the banksman did not allow time for the bucket to become quite steady before he signalled the engineman to go on again, and it had not proceeded more than a few yards before it caught a beam in the shaft with such violence as to break the bow, and being overturned, the poor youth was precipitated to the bottom, and killed.

The only fatality in connection with ironstone mines in the coal measures in my district during the year 1875 occurred at the Crosses Pit, near Bradford, belonging to the Bowling Iron Co. This one accident, however, resulted in the loss of four lives. On 30th June, shortly after 7 a.m., a violent explosion was heard, and as some 40 men and boys were at work in the mine, the greatest alarm prevailed. An exploration was at once made, and the dead and injured removed. The ventilation was found to be good, and in no way interfered with, and no trace of firedamp or carbonic acid gas could be discovered. The explosion appeared to have been one of gunpowder. A man who had been working about 50 yards from where it took place was knocked down, but on recovering went to ascertain the cause. He described what he then felt and saw to be powder smoke. The men killed were ironstone getters and hurriers. The deputy had examined the place where they worked that morning, and reported all right. There was some scale down in large pieces; in this scale is contained the ironstone. These large pieces would require to be broken up, and this is done by gunpowder. When he visited this place immediately after the explosion, the scale was partly broken up. From my observation, and from the evidence, it seemed as if powder in the canister which the men had with them had become ignited, and thus caused the explosion. One of the persons would appear to have been killed at once, the others died afterwards from the injuries they had received. It is possible that in firing the shot they may at the same time accidentally have set fire to the powder in the canister, for it was evident that a shot had been fired to break up the scale which had already been got down. I made a most careful examination of the place to see whether any gas had been ignited, but found no indications, neither did it appear from the evidence that any had been observed before the accident, while the gas produced by the explosion bore no resemblance to after-damp. After a full investigation before the coroner, Thomas Taylor, Esq., the jury returned a verdict of accidental death.

Having already, both at inquests and in special reports to you, so often dilated on the important questions of the use of the safety lamps, and the discontinuance of powder in fiery mines, it would be superfluous to say more in this Report on the subject of explosions of gas. Yet I feel it my duty once again to record my solemn conviction that so long as naked lights are allowed, and the use of explosives permitted in the fiery seams which are worked in the southern portion of my district, the chances of disastrous explosions are vastly increased. By the exclusive adoption of safety lamps, and the complete exclusion of powder, a grave element of danger would be considerably reduced. The system, as practised at some collieries, though at a less number now than formerly, of intermixing safety lamps and candles, is I think a more dangerous and objectionable one than that of working altogether with naked lights, while the custom of allowing men at later periods of the day to substitute candles for lamps is equally to be condemned. The manager must be competent to devise, and have a staff of officials able and ready to carry into effect such regulations as appear judicious, but to leave to the discretion of individual workmen a question like this, affecting the safety of all in the mine, does not seem to me wise, or calculated to promote increased security. The salutary value of the safety lamp, combined with good ventilation, has been

so repeatedly proved, perhaps more frequently in this district than in any other, by the saving of so many lives, that it seems extraordinary the fact should have to be repeatedly brought home to some before it is admitted. That it *is* now generally admitted I am thankful to say is beyond dispute.

I take this opportunity further of expressing my opinion with respect to ventilation, and more particularly as connected with safety lamps and explosives. People who think as I do regarding these latter agents are very apt to be misunderstood. It is frequently thought that they hold up the adoption of safety lamps, or the abolition of the use of explosives, as the only objects worthy of attention, and that with the use of safety lamps and the maintenance of a fair amount of discipline, other matters are not of so much importance, and even ventilation becomes a secondary consideration. I am anxious that my own opinion on this subject should be clearly understood. I, therefore, distinctly repeat what I have frequently said, that good ventilation is absolutely necessary. Nothing should give way to this; it is indeed "facile princeps" of all salutary measures. The ventilation of a mine should be as perfect as it can be made, and to attain this object, equal care should be bestowed on the *distribution* of the air and the actual quantity. A volume of air quite adequate to ventilate a mine may descend the *down-cast*, but if it ascends the *up-cast* without ramifying through the workings, it is obvious that the object in view has not been achieved, for on this ramification everything depends. The current should be so separated that some portion of the air in its pure condition may reach every division of the mine, and after doing its work pass off directly to the return, without being further made to supply other workmen with what is then simply foul air, vitiated by the noxious gases gathered in its course.

I hold it to be absolutely necessary that the first general rule should be observed in all its integrity, and that the widest possible margin should be allowed for adequate ventilation. I disclaim any thought of narrowing this rule in favour of any other means to the safe working of a mine. I advocate the adoption of safety lamps, and the exclusion of powder, as *auxiliaries*, but no one, manager or man, in any mine where these two precautions have been taken, should by any means on that account relax their efforts to secure effective ventilation.

There are still some collieries working the fiery seams in this district where naked lights are in use, and others where, although safety lamps are employed, the use of powder is allowed. At these places a change is much to be desired. I am at present thoroughly considering the matter, and hope soon to lay before you a list of all such collieries, and at the same time, while expressing my own views on the subject, ascertain what steps you may deem it advisable should be taken in order that the responsibility may be fully brought home to the owners and managers thereof. The more experience I gain, the more I am persuaded, that in these fiery seams, always liable to sudden outbursts, ventilation is *per se* inadequate. It requires to be supplemented by other means, the most important being in my opinion the exclusive use of safety lamps, and the prohibition of the employment of explosives. Additional auxiliaries naturally present themselves, such as the employment in all places of responsibility of trustworthy and experienced persons; a strict attention to and compliance with all rules and regulations on the part of one and all, a vigorously maintained discipline, well weighed instructions carefully given and as carefully attended to, and a harmonious desire on the part of all, from those on the surface to those at the face of the workings, to promote individually, so far as possible, the general safety.

Considerable objection to the use of safety lamps is still frequently evinced by the workmen. The lighting power of the lamp is less than that of the unprotected flame, and, therefore, the risk is preferred. The inducement certainly seems small, but there it is. Perhaps when scientific invention shall have raised the illuminating power of the safety lamp to that of the naked light, the only objection I have ever heard alleged against the former by miners will be overcome. Till then, as in the case of powder, it seems to be a contract matter only, between themselves and the owners.

Early in the year a very serious fire took place at a colliery, in process of being sunk by Messrs. Newton, Chambers, & Co., near Barnsley, which was fortunately productive of no fatal results. The coal was set on fire by an explosion of gas, produced probably by the firing of a shot. Other explosions followed, and it was deemed advisable to turn water into the shaft. This was a matter of difficulty, as none was at hand, but eventually a supply was obtained by laying pipes from a neighbouring colliery, and the shaft was closed. After the lapse of two or three weeks the water was drawn out, and work was resumed. A great quantity of gas was given off, but precautions were taken, and the loss was one of property only.

At the Low Stubbin Colliery, the property of Earl Fitzwilliam, the introduction of safety lamps produced a strike, the men not being content to work without compensation for the

change, which his Lordship was not prepared to grant. Terms have not since been come to, and the colliery is still closed, without, so far as I know, any prospect of being re-opened.

I have felt it my duty, under your instructions, to institute proceedings against the following persons, for various violations of the Mines Regulation Act during the year:—Mr. John Nevin, manager of Dark Lane Colliery; Mr. Emerson Bainbridge, manager of the Nunnery Collieries, Sheffield; Messrs. Marriott, owners of the Mirfield Moor Colliery, Dewsbury; Mr. Tomlinson, owner of Eccleshill Colliery, Bradford; Mr. James Frankland, manager of the Southowram Co.'s Collieries, near Halifax; and Mr. John Shore, manager of Highfield Colliery, Halifax. In all cases convictions were obtained, and penalties imposed.

Several small collieries have been closed in this district during the year, more especially among those working the thin seams; and many have been opened, the result being that there is a still further increase in the total number. In the year 1870 there were 417 mines in this district, at the present time, five years subsequent, there are 530, an increase of 113 in that period. The out-put of mineral has also risen from 11,545,400 tons in 1870, to 16,276,733 tons (exclusive of Lincolnshire) in 1875, an increase of 4,731,333 tons. This is an enormous increase, at the rate of nearly 1,000,000 tons per annum, and clearly shows what strides have been made towards the development of this important coalfield. At two collieries where operations were being prosecuted for sinking to the Silkstone Seam in a locality where it underlies the Barnsley, that seam has now been won at a depth of 500 yards, the section being most satisfactory, and giving promise of repayment for necessarily very heavy outlay.

The regulations under the eighth section of the Act, concerning the education of boys, continue to be carefully attended to, and I have had no case in the past year brought to my knowledge where the law has been evaded on this point.

A considerable number of owners who work the exceptionally thin seams in a portion of this district have availed themselves of the saving clause in the fifth section of the Act, and obtained exemption to enable them to employ boys underground between the ages of 10 and 12. The number of such boys last year amounted to 470, compared with 615 in 1874; this exhibits a decrease of 145.

I have as usual received various complaints during the year, many as afterwards shown, deserving attention, and others utterly devoid of truthfulness. All have, however, been investigated, and I continue to find on the part of owners and those in authority a desire and readiness to co-operate with me in my endeavours to obtain a greater degree of safety, by increased vigilance and attention to the rules.

The number of fans (which are replacing furnaces as a means of ventilation) is rapidly increasing, and I feel sure beneficial results will follow.

There has been no fatal accident at the mines in Lincolnshire during the year, nor has anything occurred there upon which it is necessary for me to comment in this Report.

I have, &c.,

FRANK N. WARDELL.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State.

LIST of the FATAL ACCIDENTS, and LOSS OF LIFE arising therefrom, in MR. WARDELL'S DISTRICT, comprising YORKSHIRE AND LINCOLNSHIRE, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Jan. 4	1	North Staveley	Sheffield - -	Staveley Iron and Coal Co.	W. Key - -	Collier -	37	Fall of roof - - -	—	1	—	—	—	1
„ 5	2	Aldwarke Main	Rotherham -	John Brown & Co. -	Seven persons -	- - -	—	Explosion of gas - -	7	—	—	—	—	7
„ 5	3	West Riding -	Normanton -	Pope and Pearson -	—Mills - -	Incline-man	—	Fall of roof on incline - -	—	—	—	1	—	1
„ 8	4	Featherstone Main.	Pontefract -	Featherstone Main Coal Co.	C. Green - -	Collier -	25	Fall of roof - - -	—	1	—	—	—	1
„ 8	5	Gawthorpe -	Wakefield -	G. & J. Haigh - -	R. Oldroyd -	Ditto -	37	Suffocated - - -	—	—	—	1	—	1
„ 9	6	Agnes -	Barnsley - -	W. Day - - -	John Green -	Ditto -	—	Fall of roof - - -	—	1	—	—	—	1
„ 11	7	Tinsley -	Rotherham -	B. Huntsman - -	Jas. Young -	Sinker -	46	Fell into sump from a scaffold -	—	—	1	—	—	1
„ 12	8	St. John's -	Normanton -	Locke & Co. - -	Geo. Wain -	Collier -	31	Fall of coal - - -	—	1	—	—	—	1
„ 23	9	Rawmarsh -	Rotherham -	J. and J. Charlesworth -	W. Hornsby -	Driver -	14	Kicked by a horse - -	—	—	—	1	—	1
„ 28	10	Lundhill -	Barnsley - -	Lundhill Coal Co. -	H. Thompson -	Labourer -	19	Fall of coal - - -	—	1	—	—	—	1
„ 30	11	Oaks - -	Ditto - -	C. Cammell & Co. -	W. George -	Collier -	33	Fall of coal and stone - -	—	1	—	—	—	1
								Total in January -	7	6	1	3	—	17
Feb. 2	12	Lowood's Wharncliffe.	Sheffield - -	Grayson, Lowood, & Co. -	G. Downing -	Ditto -	41	Fall of roof - - -	—	1	—	—	—	1
„ 4	13	Oaks - -	Barnsley - -	C. Cammell & Co. - -	John Fisher -	- - -	—	Ditto - - -	—	1	—	—	—	1
„ 5	14	Rockingham -	Ditto - -	Newton, Chambers, & Co.	T. Pawson - -	Sinker -	—	Fell into sump - - -	—	—	1	—	—	1
„ 15	15	Brightside -	Sheffield -	Pitsmoor Coal Co. -	M. Marsland -	Collier -	55	Fall of roof - - -	—	1	—	—	—	1
„ 17	16	Oaks - -	Barnsley - -	Cammell & Co. - -	W. Hill - -	Horse-keeper	—	Fell off pithill on surface -	—	—	—	—	1	1
„ 17	17	Hall Royd -	Ditto - -	South Yorkshire Coal Co.	W. Blackwell -	Collier -	24	Fall of coal - - -	—	1	—	—	—	1
„ 18	18	St. John's -	Normanton -	Locke & Co. - -	M. Hall - -	Waggon shunter.	21	Run over by waggons on surface -	—	—	—	—	1	1
„ 20	19	Whitwood -	Ditto - -	H. Briggs, Son, & Co. -	T. Swailes -	Collier -	32	Fall of roof - - -	—	1	—	—	—	1
„ 24	20	Manor Castle -	Sheffield -	Nunnery Coal Co. -	R. Bingley -	Ditto -	46	Ditto - - -	—	1	—	—	—	1
„ 25	21	Chevet -	Wakefield -	Chevet Coal Co. -	G. Haynes -	Sinker -	28	Fall of stone from side of shaft -	—	—	1	—	—	1
„ 26	22	High Royd -	Barnsley - -	W. H. Stone - - -	- - -	- - -	—	Fall of coal - - -	—	1	—	—	—	1
„ 26	23	Thorncliffe -	Sheffield - -	Newton, Chambers, & Co.	Jos. Rodgers -	Collier -	21	Ditto - - -	—	1	—	—	—	1
„ 27	24	Rosa - -	Barnsley - -	W. Day - - -	R. Adams -	- - -	—	Fall of roof - - -	—	1	—	—	—	1
								Total in February -	—	9	2	—	2	13

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Mar. 2	25	Darfield Main	Barnsley	Darfield Main Coal Co.	Jos. Nickling	Trammer	22	Fall of coal	–	1	–	–	–	1
„ 6	26	Old Flockton	Wakefield	M. Stanfield & Co.	W. Frudd	Hurrier	14	Ditto. This occurred on 23rd Sept. 1874.	–	1	–	–	–	1
„ 6	27	Manvers Main	Rotherham	Manvers Main Coal Co.	Geo. Bell	Collier	25	Ditto	–	1	–	–	–	1
„ 6	28	Holmes	Ditto	Rotherham, Masbro', and Holmes Co.	Jos. Diggi	Labourer	45	Run over by waggon on surface	–	–	–	–	1	1
„ 11	29	Ditto	Ditto	Ditto	O. Garner	Trammer	19	Run over by corves on engine plane	–	–	–	1	–	1
„ 20	30	Newmarket	Wakefield	J. and J. Charlesworth	Jas. Pickersgill	Deputy	33	Fall of roof	–	1	–	–	–	1
„ 25	31	East Gawber	Barnsley	R. Craik & Co.	Jno. Brannan	Labourer	26	Crushed between waggons on surface.	–	–	–	–	1	1
								Total in March	–	4	–	1	2	7
April 10	32	Gomersal Main	Leeds	T. C. Taylor & Co.	W. Walker	Engineman	—	Fell down shaft from surface	–	–	1	–	–	1
„ 10	33	Darfield Main	Barnsley	Darfield Main Coal Co.	W. Firth	Driver	14	Fall of roof into the tub in which he was riding.	–	1	–	–	–	1
„ 12	34	Charles Pit	Bradford	Bowling Iron Co.	Thos. Lee	Hurrier	13	Ditto	–	1	–	–	–	1
„ 12	35	Kiveton Park	Sheffield	Kiveton Park Coal Co.	Aaron Reed	Collier	22	Fall of roof	–	1	–	–	–	1
„ 14	36	Frystone	Pontefract	Frystone Coal Co.	W. Ramsbottom	Ditto	20	Fall of coal	–	1	–	–	–	1
„ 15	37	Conyers	Dewsbury	G. and J. Haigh	Geo. Rhodes	Hurrier	—	Crushed by corves	–	–	–	1	–	1
„ 15	38	North Gawber	Barnsley	Thorp's Gawber Hall Co.	A. Goodall	Labourer	24	Fall of coal	–	1	–	–	–	1
„ 16	39	Doleswood	Leeds	Doles and Lumb Wood Co.	H. Glover	Collier	19	Fall of roof	–	1	–	–	–	1
„ 19	40	Willow Bank	Ditto	Ditto	J. Ashworth	Hanger-on	35	Run over by corves on incline	–	–	–	1	–	1
„ 29	41	Orgreave	Sheffield	Rothervale Coal Co.	H. Barnes	—	18	Fall of roof	–	1	–	–	–	1
„ 30	42	Silkstone Main	Barnsley	Coal Con. Ass., Limited	D. Gutteridge	Collier	—	Ditto	–	1	–	–	–	1
								Total in April	–	8	1	2	–	11

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
May 10	43	Stanley	Wakefield	R. Hudson	W. Jissett	Driver	16	Run over by corves	—	1	—	1	—	1
„ 15	44	Hoyland Silkstone.	Barnsley	Wells, Birch, Ryde, & Co.	W. Stanley	Sinker	—	Engineman lowered trunk on to him in sinking shaft.	—	—	1	—	—	1
„ 21	45	Methley Junction.	Normanton	H. Briggs, Son, & Co.	Thos. Walker	Bye-workman	26	Fall of roof	—	1	—	—	—	1
„ 24	46	Snowgathead Colliery.	Huddersfield	John Haigh & Sons	Mark Bower	Collier	40	Fall of roof in pit porch	—	1	—	—	—	1
								Total in May	—	2	1	1	—	4
June 3	47	Manor	Wakefield	J. & W. Woodhead	W. Holmes	Collier	—	Fall of roof	—	1	—	—	—	1
„ 9	48	Manor	Ditto	J. and W. Woodhead	W. Teal	Deputy	55	Ditto	—	1	—	—	—	1
„ 9	49	Blacker Main	Barnsley	Blacker Main Coal Co.	A. Lloyd	Collier	—	Fall of coal	—	1	—	—	—	1
„ 12	50	Holmes	Rotherham	Rotherham, Masbro', and Holmes Coal Co.	T. Tingle	Inclineman	18	Killed on engine plane	—	—	—	1	—	1
„ 16	51	Waleswood	Sheffield	Skinner and Holford	T. Warrick	Inclineboy	17	Fell off corves on engine plane	—	—	—	1	—	1
„ 16	52	Darton Hall	Barnsley	Thorp's Gawber Hall Co.	John Kaye	Hurrier	23	Run over by corves on incline	—	—	—	1	—	1
„ 17	53	Brightside	Sheffield	Pitsmoor Coal Co.	J. Whittaker	Collier	27	Fall of roof	—	1	—	—	—	1
„ 22	54	Scholes	Bradford	Crosland Coal Co.	S. Rellett	Bye-workman	28	Ditto	—	1	—	—	—	1
„ 23	55	Stanley	Wakefield	R. Hudson & Co.	L. Slater	Hurrier	14	Ditto	—	1	—	—	—	1
„ 23	56	Orgreave	Rotherham	Rothervale Coal Co.	J. Vickers	—	18	Explosion of gas	1	—	—	—	—	1
„ 26	57	Wheldale	Castleford	Wheldale Coal Co.	John Brown	Collier	29	Fall of coal	—	1	—	—	—	1
								Total in June	1	7	—	3	—	11
July 1	58	Mirfield	Mirfield	Wheatley, Nevin, and Barraclough.	W. Bordinson, G. Judd, B. Ellis, E. Walton.	Sinkers	—	Explosion of gas	4	—	—	—	—	4
„ 5	59	Aldwarke	Rotherham	John Brown & Co.	T. Willay	Labourer	24	Crushed by pulley wheel underground.	—	—	—	1	—	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed age.	Cause of Death, and Remarks.	Number of Lives Lost.					
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous underground.	Above Ground.	Total.
1875.														
July 7	60	Whitwood	Normanton	H. Briggs & Co.	J. Dooley	Driver	15	Run over by waggon on surface	–	–	–	–	1	1
„ 8	61	Old Silkstone	Barnsley	R. C. Clarke	H. Robertshaw	Waggon shunter.	—	Crushed by waggon on surface	–	–	–	–	1	1
„ 15	62	Silkstone Main	Ditto	Coal Consumers' Association.	Jas. Crossland	Bye-workman	—	Fall of roof	–	1	–	–	–	1
„ 16	63	West Yorkshire	Wakefield	West Yorkshire Iron and Coal Co.	T. Dillon	Screener	18	Fell into a hopper on surface	–	–	–	–	1	1
„ 28	64	Stanley	Ditto	R. Hudson & Co.	R. Bradshaw	Collier	33	Fall of roof	–	1	–	–	–	1
„ 30	65	Woodhouse Junction.	Sheffield	Industrial Coal and Iron Co.	Owen Jones, W. Frost.	Sinkers	—	A shot in a sinking shaft	–	–	2	–	–	2
								Total in July	4	2	2	1	3	12
Aug. 5	66	West Retford	Rotherham	B. Huntsman	John Connor	Collier	46	Fall of roof	–	1	–	–	–	1
„ 5	67	Edmunds Main	Barnsley	Mitchell & Co.	Moses Fielding	Trammer	—	Fall of coal	–	1	–	–	–	1
„ 5	68	West Ardsley	Leeds	West Yorkshire Iron and Coal Co.	E. Beaumont		13	Fell off steam hoist on surface	–	–	–	–	1	1
„ 5	69	Broomhills	Ditto	York Road Iron and Coal Co.	C. Pitch	Collier	26	Fall of roof	–	1	–	–	–	1
„ 7	70	Crowde Hill	Bradford	Hird, Dawson, & Hardy	A. Pearson	Deputy	—	Explosion of gas. Died from shock.	1	–	–	–	–	1
„ 10	71	Wheldale	Castleford	Wheldale Coal Co.	H. Thompson	Collier	31	Fall of roof	–	1	–	–	–	1
„ 13	72	Andrew Hill	Leeds	Leathley, Bailey, and Dixon	B. Best	Ditto	—	This occurred on incline, 21st Oct. 1874.	–	–	–	1	–	1
„ 30	73	Fence	Rotherham	Rothervale Coal Co.	A. Goddard	Ditto	—	Fall of roof	–	1	–	–	–	1
								Total in August	1	5	–	1	1	8

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Sept. 9	74	Stile Common	Huddersfield	E. Brooke & Sons	D. Sykes	Collier	19	Fall of roof	–	1	–	–	–	1
„ 10	75	Oaks	Barnsley	C. Cammell & Co.	A. Osborne	Ditto	—	Fall of coal	–	1	–	–	–	1
„ 10	76	Rothwell Haigh	Leeds	J. and J. Charlesworth	W. Ellis	Fire-trier	48	Fall of roof	–	1	–	–	–	1
„ 18	77	Strafford	Barnsley	Strafford Coal Co.	W. Hirst	Collier	—	Ditto	–	1	–	–	–	1
„ 21	78	Tinsley Park	Rotherham	B. Huntsman	W. Robson	Ditto	33	Fall of side	–	1	–	–	–	1
„ 29	79	Kiveton Park	Sheffield	Kiveton Park Coal Co.	John Potter	Ditto	33	Fall of roof	–	1	–	–	–	1
								Total in September	–	6	–	–	–	6
Oct. 1	80	Featherstone Main.	Pontefract	Featherstone Main Coal Co.	Jas. McVay	Screener	32	Crushed by waggons on surface	–	–	–	–	1	1
„ 4	81	Darfield Main	Barnsley	Darfield Main Coal Co.	Thos. Stanton	Trammer	20	Fall of coal	–	1	–	–	–	1
„ 6	82	Hall Royd	Ditto	South Yorkshire Coal and Iron Co.	T. Thornton	Collier	30	Fall of roof	–	1	–	–	–	1
„ 16	83	Darfield Main	Ditto	Darfield Main Coal Co.	W. Crossley	Ditto	45	Ditto	–	1	–	–	–	1
„ 16	84	Victoria	Wakefield	R. Hudson & Co.	T. Plant	Trammer	20	Crushed by corves	–	–	–	1	–	1
„ 21	85	Mitchell's Main	Barnsley	Mitchell's Main Coal Co.	Luke Stead	Collier	—	Fall of coal	–	1	–	–	–	1
„ 24	86	West Ardsley	Wakefield	West Yorkshire Iron and Coal Co.	N. Fletcher	Hanger-on	60	Crushed by cage	–	–	1	–	–	1
„ 28	87	Waleswood	Sheffield	Skinner and Holford	W. Richmond	Dataller	28	Fall of roof	–	1	–	–	–	1
								Total in October	–	5	1	1	1	8

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List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1875.														
Nov. 2	88	Methley Junction.	Normanton -	H. Briggs, Son, & Co. -	R. Lawrence -	Collier -	58	Fall of roof - - -	–	1	–	–	–	1
„ 2	89	Thorncliffe -	Sheffield -	Newton, Chambers, & Co.	W. Shaw -	Ditto -	22	Run over on incline plane - -	–	–	–	1	–	1
„ 4	90	Stanley - -	Wakefield -	R. Hudson & Co. -	H. Mann - -	Driver -	16	Ditto self-acting plane -	–	–	–	1	–	1
„ 4	91	Wheldale -	Castleford -	Wheldale Coal Co. -	C. Finney - -	Collier -	25	Fall of roof - - - -	–	1	–	–	–	1
„ 15	92	Manvers Main	Rotherham -	Manvers Main Coal Co. -	S. Hall - -	Ditto -	31	Ditto - - -	–	1	–	–	–	1
„ 18	93	West Retford -	Ditto - -	B. Huntsman - -	F. Parker - -	Bricklayer -	19	Fell from chimney on surface, rope broke.	–	–	–	–	1	1
„ 19	94	Gregory Spring	Mirfield - -	Gregory Spring Coal Co. -	J. Lockwood -	Collier -	51	Fall of roof - - -	–	1	–	–	–	1
„ 20	95	Glass Houghton	Pontefract -	J. D. Thorpe - -	J. Holt - -	Furnacekeeper	51	Let down into the sump - -	–	–	2	–	–	2
					W. Howson -	Horsekeeper	33							
								Total in November -	–	4	2	2	1	9
Dec. 2	96	Mitchell's Main	Barnsley -	Mitchell's Main Coal Co. -	John Hancock -	Carpenter -	—	Fall of head gear, on surface -	–	–	–	–	1	1
„ 6	97	Swaithe Main -	Ditto - -	Mitchell & Co. - -	- - -	- - -	—	Explosion of gas - - -	143	–	–	–	–	143
„ 7	98	Brag Lane Ends Pit.	Wakefield -	R. Hudson & Co. -	Charles Firth -	Labourer -	19	Fell out of tub whilst ascending shaft	–	–	1	–	–	1
„ 8	99	Aldwarke -	Rotherham -	John Brown & Co. -	T. Starkey -	Collier -	27	Fall of roof - - -	–	1	–	–	–	1
„ 9	100	Methley Junction.	Normanton -	H. Briggs, Son, & Co. -	- - -	- - -	—	Explosion of gas - -	6	–	–	–	–	6
„ 10	101	Darton Hall -	Barnsley - -	Thorp's Gawber Hall Co. -	T. Elliott -	Collier -	25	Fall of roof - - -	–	2	–	–	–	2
					W. Brown -	Engineman	21							
„ 11	102	Silkstone -	Normanton -	Pope and Pearson - -	T. Davies - -	Driver -	15	Crushed by corves - -	–	–	–	1	–	1
„ 13	103	Lund Hill -	Barnsley - -	Lund Hill Coal Co. -	Joseph Brown -	Collier -	37	Fall of roof - - -	–	1	–	–	–	1
„ 15	104	Park Pit -	Dewsbury -	Park Coal Co. - -	W. H. Marsh -	Hurrier -	14	Crushed by corves - -	–	–	–	1	–	1
								Total in December -	149	4	1	2	1	157
								Total for the year -	162	62	11	17	11	263

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of Mine.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost. Explosions.	Falls of Ironstone and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
						IRONSTONE.								
1875.														
June 30	1	Crosses	Bradford	Bowling Iron Co.	W. Padgett	Ironstone miner.	57	Explosion of powder	–	–	–	4	–	4
					Jos. Holmes	Hurrier	15							
					Benj. Bailey	Ironstone miner.	17							
					N. Padgett	Ditto	22							
								Total in ironstone mines for the year.	–	–	–	4	–	4
								Grand total in 1875	162	62	11	21	11	267

List of Mines classed under the Coal Mines Regulation Act, in Mr. Wardell's District, 1875.

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
1. W. Day, Barnsley	Agnes	Barnsley	Coal.
2. Barrow Hæmatite Steel Co., Barnsley	Barrow	,,	Sinking.
3. Blacker Main Coal Co., Barnsley	Blacker Main	,,	Coal.
4. T. W. Naylor, Darton, near Barnsley	Belle Vue	,,	,,
5. H. Lodge, Darton, near Barnsley	Bloomhouse Green	,,	,,
6. Corton Wood Coal Co., Barnsley	Corton Wood	,,	Sinking.
7. Dyson and Wright, Barnsley	Cudworth	,,	,,
8. Silkstone and Dodworth Coal and Iron Co., Higham, near Barnsley.	Dodworth	,,	Coal.
9. Darfield Main Coal Co., Darfield, near Barnsley.	Darfield Main	,,	,,
10. Darley Main Coal Co., Barnsley	Darley Main	,,	,,
11. Bell Armitage, Barnsley	Dodworth Road	,,	,,
12. R. Craik & Co., Barnsley	East Gawber	,,	,,
13. Leather and Littlewood, Havercroft, near Barnsley.	Ellis Laith	,,	,,
14. Mitchell & Co., Barnsley	Edmunds Main	,,	,,
15. Messrs. Greaves, Barnsley	Gawber Hall	,,	,,
16. Fountain and Son, Haigh, near Barnsley	Haigh	,,	,,
17. South Yorkshire Coal and Iron Co., Barnsley.	Hall Royd	,,	,,
18. Hall & Co., Barnsley	High Royd and Elsecar.	,,	,,
19. High Stile Coal Co., Barnsley	High Stile	,,	,,
20. Hodroyd Coal Co., Havercroft, near Barnsley.	Hodroyd	,,	,,
21. Wells & Co., Barnsley	Hoyland Silkstone	,,	,,
22. Houghton Main Coal Co., Darfield, near Barnsley.	Houghton Main	,,	Sinking.
23. Joseph Sykes, Barnsley	Kidfield Nook	,,	Coal.
24. J. and S. Brown	Kingston	,,	Sinking.
25. Henry Briggs, Barnsley	Lewden Bridge	,,	Coal.
26. Lundhill Coal Co., Barnsley	Lundhill	,,	,,
27. Mitchell & Co., Barnsley	Mitchell Main	,,	Sinking.
28. Monckton Main Co.	Monckton Main	,,	,,
29. Fountain and Son, Haigh, near Barnsley.	Moor House	,,	Coal.
30. Monk Bretton Coal Co., Barnsley	Monk Bretton	,,	,,
31. W. Day, Barnsley	Mount Osborne	,,	,,
32. Sturges, Paley, & Co., Barnsley	New Gawber Hall	,,	,,
33. Thorp's Gawber Hall Coal Co., Barnsley.	North Gawber	,,	,,
34. C. Cammell & Co., Barnsley	Oaks	,,	,,
35. Senior Brothers, Barnsley	Oakwell	,,	,,
36. W. Day, Barnsley	Old Mill	,,	,,
37. R. C. Clarke, Barnsley	Old Silkstone	,,	,,
38. Coopers & Co., Worsbro' Park, near Barnsley.	Old Silkstone Main	,,	,,
39. Joshua Barraclough, Barnsley	Old Town	,,	,,
40. Darley Main Coal Co., Barnsley	Pindar Oaks	,,	,,
41. T. A. Mann & Co., Rockley, near Barnsley.	Rockley	,,	Coal and ironstone.
42. Newton, Chambers, & Co., Hoyland, near Barnsley.	Rockingham	,,	Sinking.
43. W. Day, Barnsley	Rosa	,,	Coal.
44. Coal Consumers' Association, Barnsley	Silkstone Main	,,	,,
45. Day and Co.	Silkstone Banks	,,	,,
46. Silkstone and Dodworth Coal and Iron Co., Higham, near Barnsley.	Silkstone	,,	,,
47. Mitchell & Co., Barnsley	Swaithe Main	,,	,,
48. Strafford Coal Co., Barnsley	Strafford	,,	,,
49. Sutcliffe & Co., Barnsley	Victoria	,,	,,
50. H. Durden, Barnsley	West Gawber	,,	,,
51. Wharncliffe Silkstone Coal Co., Wortley, near Sheffield.	Wharncliffe Silkstone	,,	,,
52. Wharncliffe Woodmoor Coal Co., Carlton, near Barnsley.	Wharncliffe Woodmoor	,,	,,

LIST of MINES in MR. WARDELL'S DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
53. Thorp's Gawber Hall Coal Co., Barnsley.	Willow Bank - -	Barnsley -	Coal.
54. Wombwell Main Coal Co., Barnsley -	Wath Wood - -	,, -	,,
55. Thos. Haigh, Barnsley - - -	Winter Hill - -	,, -	,,
56. Woolley Coal Co., Darton, near Barnsley.	Woolley - -	,, -	,,
57. Coopers & Co., Worsbro' Park, near Barnsley.	Worsbro' Park -	,, -	,,
58. Wombwell Main Coal Co., Barnsley -	Wombwell Main -	,, -	,,
3 opened } Total 58. 1 closed }			
1. Townend Brothers, Bingley - - -	Denholme - -	Bingley -	,,
2. Ditto - - - - -	,, - -	,, -	,,
3. Briggs and Sons, Bingley - -	Shipley Moor -	,, -	,,
4. Wood and Son, Bingley - -	Wilsden - -	,, -	,,
1. Bowling Iron Co., Bowling, near Bradford.	Allerton - -	Bradford -	Coal and ironstone.
2. Wood and Son, Thornton, near Bradford.	Allerton - -	,, -	Coal.
3. Handforth & Co., Bradford - -	Bolton Wood -	,, -	,,
4. Ephraim Holliday, Tong, near Bradford.	Booth Holme -	,, -	,,
5. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Bowling - -	,, -	Coal and ironstone.
6 Jos. Beanland, Bradford - -	,, - - -	,, -	,, ,,
7. Bowling Iron Co., Bowling, near Bradford.	,, - -	,, -	,, ,,
8. E. Gittins, Bradford - -	,, - - -	,, -	Coal.
9. Bowling Iron Co., Bowling, near Bradford.	Bradford - -	,, -	Coal and ironstone.
10. Jos. Wood, Bradford - -	Bradford Moor -	,, -	Coal.
11. Thos. Pitts, Bradford - -	Broom Hall -	,, -	,,
12. Bowling Iron Co., Bowling, near Bradford.	Bunker's Hill -	,, -	Coal and ironstone.
13. Ditto - - -	Cleckheaton - -	,, -	,, ,,
14. Hird, Dawson, and Hardy, Low Moor, near Bradford.	,, - -	,, -	,, ,,
15. Ditto - - -	Clifton - -	,, -	,, ,,
16. Ditto - - -	Cutter Height -	,, -	,, ,,
17. G. Mortimer, Low Moor, near Bradford.	Dog Lane - -	,, -	Coal.
18. Thos. Tomlinson, Low Moor, near Bradford.	Eccleshill - -	,, -	,,
19. Briggs and Son, Bradford - -	Heaton - -	,, -	,,
20. George Heaton, Shipley, near Bradford	Heaton (Shipley) -	,, -	Coal and fire-clay.
21. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Holme Bank -	,, -	Coal and ironstone.
22. Bowling Iron Co., Bowling, near Bradford.	Hunsworth - -	,, -	,, ,,
23. J. and R. Taylor, Cleckheaton, near Bradford.	Hunsworth Mills -	,, -	Sinking.
24. Jos. Cliffe and Sons, Laister Dyke, near Bradford.	Laister Dyke -	,, -	Coal and fire-clay.
25. Holt, Thomas, and Healey, Cleckheaton, near Bradford.	Merchant Fields -	,, -	Sinking.
26. Bowling Iron Co., Bowling, near Bradford.	North Bierley -	,, -	Coal.
27. John Hind and Brothers, Wyke, near Bradford.	Green Lane -	,, -	Sinking.
28. J. Holmes, Birkenshaw, near Bradford	Blue Hill - -	,, -	Coal.
29. Healey & Co., Birkenshaw, near Bradford.	Toftshaw Moor -	,, -	,,
30. Hird, Dawson, and Hardy, Low Moor, near Bradford.	North Bierley -	,, -	,,
31. Shipley Fire-clay Co., Shipley, near Bradford.	North Cliff - -	,, -	Coal and fire-clay.
32. Squire Broadbent, Tong, near Bradford	Newmarket -	,, -	Sinking.
33. Holt & Co., Cleckheaton, near Bradford	Popplewell - -	,, -	Coal.
34. W. Terry & Co., Tong, near Bradford	Red Hill - -	,, -	,,
35. Smith & Co., Bradford - -	Rockwell - -	,, -	,,

List of Mines in Mr. Wardell's District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
36. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Scholes	Bradford	Coal and ironstone.
37. Ditto	Shelf	,,	,, ,,
38. Green and Bland, Cleckheaton, near Bradford.	Scholes	,,	Sinking.
39. Crosland Coal Co., Cleckheaton, near Bradford.	,,	,,	,,
40. W. Firth, Shipley, near Bradford	Shipley Moor	,,	Coal.
41. Wood and Son, Thornton, near Bradford.	Thornton	,,	,,
42. D. Illingworth and Sons, Thornton, near Bradford.	,,	,,	,,
43. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Tong	,,	,,
44. Bowling Iron Co., Bowling, near Bradford.	,,	,,	,,
45. Squire Broadbent, Tong, near Bradford	,,	,,	,,
46. John Tordoff, Wibsey, near Bradford	Wibsey Bank Foot	,,	Coal and ironstone.
47. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Wike	,,	Coal.
48. Mitchell Brothers	Wroe	,,	,,
2 closed None opened } Total 48.			
1. Crawshaw and Blakeley, Dewsbury	Babes in the Wood	Dewsbury	,,
2. Raynor Brothers, Dewsbury	Bank Top	,,	,,
3. Jas. Critchley, Batley, near Dewsbury	Batley	,,	,,
4. Isaac Colbeck	Brier-Birstal	,,	,,
5. Chas. Wheatley, Mirfield, Dewsbury	Calder	,,	,,
6. Chickenly Heath Coal Co., Dewsbury	Chickenly Heath	,,	,,
7. J. C. Ingham, Thornhill, near Dewsbury.	Combs	,,	,,
8. John Holliday and Brothers, Batley, near Dewsbury.	Crossbank	,,	,,
9. Crawshaw & Co., Dewsbury	Dewsbury Bank	,,	,,
10. Wroe & Co., Dewsbury	Dewsbury Moor	,,	,,
11. G. and J. Haigh, Dewsbury	,,	,,	,,
12. Jos. Bedford, Whitley, near Dewsbury	Falhouse	,,	,,
13. Gregory Spring Coal Co., Mirfield	Gregory Spring	,,	,,
14. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Hartshead	,,	,,
15. John Cutt, Briestfield, near Dewsbury	Howroyd	,,	Sinking.
16. Hamath Fell, Briestfield, near Dewsbury	Heeley	,,	Coal.
17. Chas. Wheatley, Mirfield	Hagg Wood	,,	,,
18. Jos. Sheard, Mirfield, near Dewsbury	Hopton	,,	,,
19. J. C. Ingham, Thornhill, Dewsbury	Hostingley	,,	,,
20. J. C. Ingham, Thornhill, Dewsbury	Ings	,,	,,
21. Chas. Wheatley, Mirfield	Ledgard Bridge	,,	,,
22. Rhodes, Wright, and Wroe near Dewsbury.	Liversedge	,,	,,
23. J. Ashton, Hopton, near Mirfield	Knowl	,,	Sinking.
24. Wheatley, Nevin, and Barraclough, Mirfield.	Mirfield	,,	Coal.
25. Messrs, Marriott, Mirfield	Mirfield Moor	,,	,,
26. Benjn. Barraclough, Mirfield	Northorpe	,,	,,
27. G. Pollitt, Mirfield	Primrose Lane	,,	Sinking.
28. G. and J. Haigh, Dewsbury	Ravens Lodge	,,	Coal.
29. Crawshaw & Co., Dewsbury	Ridings	,,	,,
30. Roach Coal Co., Batley	Roach	,,	Sinking.
31. Crawshay & Co., Dewsbury	Soothill	,,	Coal.
32. J. Blakeley, Dewsbury	Soothill Wood	,,	Sinking.
33. Benjn. Barraclough, Mirfield	Upper Crosley	,,	Coal.
34. Chas. Wheatley, Mirfield	Whitley Wood	,,	,,
35. E. Lockwood, Batley	Woodwell	,,	Sinking.
1 opened - Total 35.			
1. Michael Pearson, Thornton, near Bradford.	Alderscholes	Halifax	Coal.
2. Swan Bank Coal Co., Halifax	Bank Bottom	,,	,,
3. — Cookson, Halifax	Binns Bottom	,,	,,
4. Topham & Co., Shelf, near Halifax	Brackens Lane End	,,	,,

LIST of MINES in MR. WARDELL'S DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
5. M. Bottomley and Son, Shelf, near Halifax.	Cockhill Farm -	Halifax -	Coal.
6. Michael Stocks, Halifax - -	Crooked Lane -	,, -	,,
7. Charlestoun Brick and Tile Co., Halifax.	Charlestown - -	,, -	Sinking.
8. Henry Hawkyard, Elland, Halifax -	Dickey Steel -	,, -	,,
9. Robinson & Co., Elland, Halifax -	Elland - -	,, -	Sinking and fire-clay.
10. David Shaw, Halifax - -	Folly Hall - -	,, -	Sinking.
11. John Cawthrae, Shibden Dale, near Halifax.	Four Lane End -	,, -	Coal.
12. Joseph Metcalfe & Co., Queensbury, near Halifax.	Harp Bottom - -	,, -	,,
13. Holmes and Holt, Halifax - -	Highfield - -	,, -	,,
14. John Lister, Halifax - -	Lower Shibden -	,, -	,,
15. Bateman, Wells, and Kellett, Norwood Green.	Mill - - -	,, -	Sinking.
16. Norwood Green Coal Co., Halifax -	Norwood Green -	,, -	,,
17. Sheard & Co., Halifax - -	Peep Green -	,, -	Coal.
18. Holmes & Co., Halifax - -	Quarry House - -	,, -	,,
19. Joseph Briggs and Sons, Halifax -	Queensbury - -	,, -	,,
20. Michael Stocks, Halifax - -	Shaw Lane - -	,, -	,,
21. Holmes & Co., Halifax - -	Shibden - -	,, -	,,
22. John Lister, Halifax - -	Shibden Hall - -	,, -	,,
23. Michael Stocks, Halifax - -	Shibden Head -	,, -	,,
24. Briggs and Sons, Halifax - -	Shipley Moor - -	,, -	,,
25. Ditto - - - -	Shugden - -	,, -	,,
26. Michael Stocks, Halifax - -	Shugden Head -	,, -	,,
27. T. S. Walsh, Ovenden, near Halifax -	Soil Hill - -	,, -	,,
28. Swan Bank Coal Co., Halifax -	Thornton - -	,, -	,,
29. Arthur Dawson, Southowram, near Halifax.	Walter Clough -	,, -	Sinking.
3 closed None opened } Total 29.			
1. C. S. and H. W. Tinker, Holmfirth -	Balance Booth -	Holmfirth -	Coal.
2. Hirst and Lockwood, Hepworth, near Holmfirth.	Barnside - - -	,, -	,,
3. C. S. and H. W. Tinker, Holmfirth -	Clayworks - -	,, -	,,
4. Chas. Lockwood, New Mills, near Holmfirth.	Carr Wood - -	,, -	,,
5. — Wagstaff, Holmfirth - -	Fox House - -	,, -	,,
6. C. S. and H. W. Tinker, Holmfirth -	Gatehead - -	,, -	,,
7. Hepworth Iron Co., New Mills, near Holmfirth.	Hollin House - -	,, -	,,
8. Ditto - - - -	Hepworth - -	,, -	,,
9. George Hinchliffe, Holmfirth - -	Knab - -	,, -	Sinking.
10. J. & A. Kaye, Hepworth - -	Knowles - -	,, -	,,
11. John Haigh, Holmfirth - -	Thurstonland - -	,, -	Coal.
12. C. S. and H. W. Tinker, Holmfirth -	Wood - -	,, -	,,
1 opened 1 closed } Total 13.			
1. Seth, Senior, and Sons, Huddersfield	Box Ings - -	Huddersfield -	,,
2. Chas. Wheatley, Mirfield - -	Bradley - -	,, -	,,
3. Messrs. Haigh, Huddersfield - -	Brockholes - -	,, -	,,
4. Matthews & Co., Shelley, near Huddersfield.	California - -	,, -	,,
5. Norton Brothers & Co., Clayton West, near Huddersfield.	Clayton Common -	,, -	,,
6. J. Sheard, Huddersfield - -	Cowmes - -	,, -	,,
7. John Addy, Cumberworth, near Huddersfield.	Cumberworth - -	,, -	,,
8. Falcks, Bros. - - -	Denby Dale -	,, -	,,
9. Norton Brothers & Co., Clayton West, near Huddersfield.	Duke Wood - -	,, -	,,
10. C. W. F. Taylor, Denby Dale, near Huddersfield.	Denby Dale - -	,, -	Sinking.
11. E. Brooke & Sons, Huddersfield -	Fellgreave - -	,, -	,,
12. Edward Brooke, Huddersfield - -	Fieldhouse - -	,, -	Coal and fire-clay.
13. R. Firth and Son - - - -	German Main, Denby Dale.	,, -	Coal.
14. Jones and Waterhouse, Huddersfield -	Grimescar - -	,, -	,,

List of Mines in Mr. Wardell's District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
15. J. Alderson and Son, Shelley, near Huddersfield.	Greenhouse - -	Huddersfield -	Sinking.
16. Chas. Wheatley, Mirfield - -	Helm - -	„ -	Coal.
17. Messrs. Haigh, Huddersfield - -	Hollinhouse - -	„ -	„
18. H. Lister - - -	High Park, Bradley -	„ -	„
19. W. Lodge & Co., Kirkburton, near Huddersfield.	High Wood - -	„ -	Sinking.
20. Messrs. Cardwell, Huddersfield -	Kirkheaton - -	„ -	Coal.
21. Hey and Carter, Huddersfield - -	Linfit - -	„ -	„
22. Ed. Brook and Sons, Huddersfield -	Lockwood Common -	„ -	Coal and fire-clay.
23. H. Schofield - - -	Lower Cumberworth	„ -	Coal.
24. Pitt and Booth, Huddersfield -	Lower Holmhouse -	„ -	Sinking.
25. Geo. Newsome, Highburton, near Huddersfield.	Moor Lane - -	„ -	Coal.
26. Ed. Brook and Sons, Huddersfield -	New Ground -	„ -	Coal and fire-clay.
27. W. & C. Hirst, Shelley - -	Ozzings - -	„ -	Sinking.
28. J. Sheard, Huddersfield - -	Pease Close - -	„ -	Coal.
29. Z. Hinchcliffe, Denby - -	Pool Hill - -	„ -	Sinking.
30. Mellor and Sanderson, Denby Dale, near Huddersfield.	Pulling Hill - -	„ -	„
31. B. Mellor, Kirkburton -	Riley Lane - -	„ -	„
32. J. Sheard, Huddersfield - -	Rowley - -	„ -	Coal.
33. Copley & Co., Huddersfield - -	Shelley - -	„ -	„
34. Messrs. Haigh, Huddersfield -	Sinking Wood -	„ -	„
35. John Hargrave & Co., Clayton West, near Huddersfield.	Toppit - -	„ -	„
36. Kempenny and Robinson, Huddersfield.	Thurstonland - -	„ -	Sinking.
37. James Robinson - - -	Thurstonland Bank, Brockholes.	„ -	Coal.
38. Messrs. Cardwell, Kirkheaton, near Huddersfield.	Whitley - -	„ -	„
39. John Woodhead, Kirkburton, near Huddersfield.	Wilson Main -	„ -	Sinking.
4 opened None closed } Total 38.			
1. Levi Towler, Burton in Lonsdale -	Greeta Main -	Ingleton -	Coal.
2. W. Bracewell, Ingleton - -	Ingleton - -	„ -	„
1. Medcalf and Harrison, Adwalton, near Leeds.	Adwalton Common -	Leeds - -	„
2. Rushforth & Co., Adwalton, near Leeds.	Adwalton Lane -	„ - -	„
3. W. Bower and Brothers, Adwalton, near Leeds.	Adwalton Moor -	„ - -	„
4. Bowers Allerton Coal Co., Woodlesford, near Leeds.	Allerton Main - -	„ - -	„
5. Leathleys, Bailey, and Dixon, Gildersome, near Leeds.	Andrew Hill -	„ - -	Sinking.
6. Squire Broadbent, Adwalton, near Leeds.	Adwalton Moor -	„ - -	„
7. Bowers Allerton Coal Co., Woodlesford, near Leeds.	Astley - -	„ - -	Coal.
8. W. Midgley, Leeds - - -	Baildon Moor -	„ - -	„
9. West Yorkshire Iron and Coal Co., West Ardsley, near Leeds.	Balaklava - -	„ - -	Coal and ironstone.
10. Farnley Iron Co., Farnley, near Leeds.	Beeston - -	„ - -	„ „
11. R. A. Sheard, Robertown, near Normanton.	Balm Gate - -	„ - -	Sinking.
12. Holdsworth and Wilkinson, Pottern-newton, near Leeds.	Beckett Street -	„ - -	„
13. Harding & Co., Beeston, near Leeds -	Beeston - -	„ - -	Coal and ironstone.
14. Hird, Dawson, and Hardy, Beeston -	„ - -	„ - -	„ „
15. W. H. Colbeck, Birkenshaw, near Leeds	Birkhill - -	„ - -	Coal.
16. Benjamin North, Wortley, near Leeds.	Blue Hills Lane -	„ - -	„
17. Barraclough & Co., Adwalton, near Leeds.	Britannia Main -	„ - -	„
18. Manston Coal Co., Manston, near Leeds.	Brown Moor -	„ - -	„

LIST of MINES in MR. WARDELL'S DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
19. Newmarket Coal Co., Drighlington, near Leeds.	Bushey	Leeds	Coal.
20. E. J. W. Waterhouse	Calder Lower Fire-clay Mine, Elland.	„	Fire-clay.
21. Woodhead's Executors, Leeds	Calverley	„	Coal.
22. Birkhead & Fearnley, Heckmondwike	Cawley	„	Sinking.
23. Harding & Co., Beeston, near Leeds	Churwell	„	Coal and ironstone.
24. Hird, Dawson, and Hardy, Low Moor, near Bradford.	Churwell	„	„ „
25. William Ward, Churwell, near Leeds	„	„	„ „
26. Farnley Iron Co., Farnley, near Leeds	„	„	„ „
27. Bowling Iron Co., Bowling near Bradford.	Cross Green	„	Coal and ironstone.
28. Rhodes Executors, Birstall near Leeds.	Crow Trees	„	Coal.
29. Firth Bros., Heckmondwike, near Leeds.	Cooke Lane	„	Sinking.
30. Lister & Co., Morley, Leeds	Dartmouth	„	Coal.
31. Bedford & Co., Morley, Leeds	Dean Hall	„	„
32. Doleswood Coal Co., Drighlington, Leeds.	Doleswood	„	„
33. J. Towler, Leeds	Elland Road	„	Sinking.
34. Bowling Iron Co., Bradford, Leeds	Ellerby Lane	„	Coal and ironstone.
35. Wortley Fire-clay Co., Leeds	Elland Road	„	Coal and fire-clay.
36. Joseph Holme, Birkenshaw, Bradford	Blue Hills	„	Coal.
37. Farnley Iron Co., Farnley, Leeds	Farnley	„	Coal, and ironstone, and fire-clay.
38. A. Rogers and Son, Leeds	Farnley Wood	„	Coal.
39. William Wood, Methley, Leeds	Foxholes	„	„
40. Garforth Coal Co., Garforth, Leeds	Garforth	„	„
41. William Ward, Churwell, Leeds	Geldard Road	„	„
42. Moore, Hall, and Render	Gelderd Hill, Gildersome.	„	„
43. Farnley Iron Co., Farnley, Leeds	Gildersome	„	Coal and fire-clay.
44. John Holliday and Brothers, Leeds	Gildersome Street	„	Coal.
45. James Kellett	Goan Royd, Heckmondwike.	„	„
46. Robinson & Co., Hunslet, Leeds	Green Man	„	„
47. Smith & Co., Rawden, Leeds	Greville	„	„
48. J. Wormald & Sons, Leeds	Greville	„	Sinking.
49. B. Canthery, Pudsey, Leeds	Green Top	„	„
50. Farnley Iron Co., Farnley, Leeds	Harehills	„	Coal.
51. Hird, Dawson, and Hardy, Low Moor, Bradford.	Holbeck	„	Coal and ironstone.
52. S. and J. Holdsworth, Adwalton, Leeds.	Horse Riggs	„	Coal.
53. Howdenclough Coal Co., Leeds	Howdenclough	„	„
54. Howley Park Coal Co., Batley, Leeds	Howley Park	„	„
55. Hird, Dawson, and Hardy, Low Moor, Bradford.	Hunslet	„	„
56. G. W. Hick, Leeds	Hunslet Carr	„	Sinking.
57. Joshua Taylor, Leeds	Howdenclough	„	„
58. Jas. Troughton & Co., Adwalton, Leeds	Hunger Hill	„	„
59. F. B. Ellison, Leeds	Idle	„	„
60. York Road Coal and Iron Co., Leeds	Killingbeck	„	Coal, ironstone, and fire-clay.
61. Locke & Co., Leeds	Kippax	„	Coal.
62. Samuel Jackson, Gomersal, Leeds	Lanes Wood	„	„
63. Crowther & Co., Leeds	Little Gomersal	„	„
64. Holliday & Brooksbank, Gildersome	Lodge	„	Sinking.
65. J. R. Fyfe & Co.	Low Wood, Shipley	„	Coal and fire-clay.
66. Doleswood Coal Co., Drighlington, Leeds.	Lumb Wood	„	Coal.
67. W. Farrar and Son, White Lee, Birstall, Leeds.	Lee	„	Sinking.
68. Manston Coal Co., Manston, Leeds	Manston	„	Coal.
69. Whitaker & Roberts, Churwell	Mary	„	Sinking.
70. J. Cliff & Sons, Micklefield, Leeds	Micklefield	„	Coal.
71. Middleton Coal Co., Middleton, Leeds	Middleton	„	„
72. Manston Coal Co., Manston, Leeds	Manston Lodge	„	„
73. H. Harrison, Leeds	Moortown	„	Sinking.
74. Harding & Co., Beeston, Leeds	Morley	„	Coal.
75. Farnley Iron Co., Farnley, Leeds	Morley	„	Coal and ironstone.
76. W. Ackroyd and Brothers, Morley, Leeds.	Morley Main	„	Coal.

List of Mines in Mr. Wardell's District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
77. Alfred West, Leeds	Muffitt Lane	Leeds	Coal.
78. Bedford and Rushforth, Gildersome, Leeds.	Moorland	,,	Sinking.
79. W. Gledhill, Leeds	Fountain	,,	Coal.
80. Norwegian Titanic Iron Co., Leeds	Neville Hill	,,	Coal and ironstone.
81. Grosvenor and Son, Middleton, Leeds	New Hall	,,	Coal.
82. Jos. Rawlinson, Adwalton, Leeds	Newmarket	,,	Coal and fire-clay.
83. B. Asquith, Drighlington, Leeds	New Crown Point	,,	Sinking.
84. Bedford & Co., Drighlington, Leeds	Nethertown	,,	,,
85. Joseph Cooper, Drighlington, Leeds	,,	,,	,,
86. T. C. Taylor & Co., Birstall, Leeds	Near Low Park	,,	,,
87. Houscroft and Metcalf, Drighlington, Leeds.	New Lane	,,	,,
88. W. Ackroyd and Brothers, Morley, Leeds.	Oakwell	,,	Coal.
89. John Taylor, Robert Town	Old Hall	,,	Sinking.
90. Farnley Iron Co., Farnley, Leeds	Osmondthorpe	,,	Coal and ironstone.
91. Farnley Iron Co., Farnley, Leeds	Potternewton	,,	,,
92. T. H. Jackson, Liversedge, Leeds	Primrose Hill	,,	Coal.
93. Leeds Patent Brick Co., Dolly Lane, Leeds.	Primrose	,,	Sinking.
94. W. & J. Harris, Leeds	Pudsey	,,	,,
95. Park Coal Co., Liversedge, near Leeds.	Park	,,	,,
96. Jos. Wright, Liversedge, Leeds	Quaker Lane	,,	Coal.
97. Mann & Co., Roberttown, Normanton.	Robert Town	,,	,,
98. Parkin & Co., Roberttown, Normanton.	,,	,,	,,
99. J. & J. Charlesworth, Rothwell Haigh, Leeds.	Robin Hood	,,	Coal and ironstone.
100. Wilcock & Co., Bumantofts, Leeds	Rock	,,	Coal, ironstone, and fire-clay.
101. J. & J. Charlesworth, Rothwell Haigh, Leeds.	Rothwell Haigh	,,	Coal and ironstone.
102. J. H. Rhodes, Gildersome Street, Leeds.	Raw Royds	,,	Sinking.
103. Executors of W. Harrison, Gomersal, Leeds.	Scotland	,,	Coal.
104. Manston Coal Co., Manston, Leeds	Seacroft	,,	,,
105. Alfred West, Birstal, Leeds	Smithies	,,	,,
106. Fearnley Garforth, Drighlington, Leeds.	Spring Gardens	,,	,,
107. Stanley Coal Co., Liversedge, Leeds	Stanley Main	,,	,,
108. Liversedge Coal Co., Liversedge, Leeds.	Strawberry Bank	,,	,,
109. Rhodes & Dalby, Drighlington, Leeds.	Sykes	,,	,,
110. Tanhouse Mill Co., Liversedge, Leeds.	Tanhouse Mill	,,	,,
111. F. Garforth, Leeds	Thickthorn	,,	Sinking.
112. Healey & Petty, Birkenshaw, Leeds	Toft Shaw Moor	,,	Coal.
113. Do.	Tong Moor	,,	,,
114. T. C. Taylor & Co., Birstall, Leeds	Trinity	,,	Sinking.
115. Messrs. Haigh, Morley, Leeds	Victoria	,,	Coal.
116. Towler & Co., Adwalton, Leeds	,,	,,	,,
117. J. Towler, Birstall, Leeds	,,	,,	,,
118. Waterloo and Woodlesford Coal Co., Woodlesford, Leeds.	Waterloo	,,	,,
119. John T. Leather, Leeds	Waterloo Main	,,	,,
120. J. Bastow	Webster, Adwalton	,,	,,
121. J. Jackson and Son, Leeds	Wellington	,,	,,
122. Manston Coal Co., Manston, Leeds	West Yorkshire	,,	,,
123. York Road Iron and Coal Co., York Road, Leeds.	White Horse	,,	Coal, ironstone, and fire-clay.
124. Alfred West, Leeds	White Lee	,,	Coal.
125. Rushforth & Co.	Wire Hall, Adwalton	,,	,,
126. Jos. Birkby, Liversedge	Woodfield	,,	Sinking.
127. Ingham and Son, Wortley, Leeds	Wortley	,,	Coal, ironstone, and fire-clay.
128. Cliff and Son, Wortley, Leeds	,,	,,	Coal, ironstone, and fire-clay.
129. J. Jackson and Son, Gomersal, Leeds.	West Lane	,,	Sinking.

LIST of MINES in Mr. WARDELL'S DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
130. Robinson and Clayton, York Road, Leeds.	York Road -	Leeds -	Coal and ironstone.
6 opened, 2 closed } Total 130.			
1. H. Briggs Son and Co., Normanton -	Goodhope -	Normanton -	Coal.
2. Pope and Pearson, Normanton -	Haigh Moor -	,, -	,,
3. H. Briggs, Son, & Co., Normanton -	Methley Junction -	,, -	,,
4. Locke & Co., Normanton - -	St. John's - -	,, -	,,
5. H. Briggs, Son, & Co., Normanton -	Saville - -	,, -	Sinking.
6. Pope and Pearson, Normanton -	West Riding -	,, -	Coal.
7. H. Briggs, Son, & Co., Normanton -	Whitwood -	,, -	,,
1. J. Hinchliffe & Co., Penistone -	Bullhouse - -	Penistone -	,,
2. Do. - - -	Crowedge - -	-	,,
3. Thos. Haigh, Penistone - -	Denby Dale -	-	,,
4. Hugh Tomasson, Thurlstone, near Penistone.	Flash House -	,, -	,,
5. J. Hinchliffe & Co., Penistone -	Middlecliffe -	,, -	,,
1. Thos. M. Carter & Co., Castleford -	Allerton Bywater -	Pontefract -	,,
2. Featherstone Coal Co., Pontefract -	Featherstone -	,, -	,,
3. Geo. Bradley, Castleford - -	Featherstone Manor	,, -	Sinking.
4. Frystone Coal Co., Castleford -	Frystone - - -	,, -	,,
5. Lias Lime & Cement Co., Pontefract	Glass Houghton -	,, -	,,
6. Wilks & Co., Castleford - -	Glass Houghton -	,, -	Coal.
7. J. H. Garbutt, Castleford - -	Newton Main -	,, -	,,
8. Rhodes and Dalby, Pontefract -	Prince of Wales -	,, -	,,
9. H. Briggs Son & Co., Normanton -	Streethouse - -	,, -	,,
10. Rhodes and Dalby, Pontefract -	Snydale - - -	,, -	,,
11. Wheldale Coal Co., Castleford -	Wheldale - -	,, -	,,
1. L. Horner & Co., Skipton -	Bradley - - -	Skipton -	Sinking.
2. W. Lambert, Threshfield, Skipton -	Threshfield - -	Grassington -	Coal.
1. John Brown & Co., Rotherham -	Aldwarke Main -	Rotherham -	,,
2. Chambers & Son, Rotherham -	Butterthwaite -	,, -	Sinking.
3. John Brown & Co., Rotherham -	Car House -	,, -	Coal.
4. Denaby Main Coal Co., Masbro', Rotherham.	Denaby Main -	,, -	,,
5. Earl Fitzwilliam, Elsecar, Barnsley -	Elsecar - -	,, -	Coal and ironstone.
6. Fence Coal Co., Rotherham - -	Fence - - -	,, -	Coal.
7. Chambers & Son, Rotherham -	Grange - -	,, -	,,
8. P. Digget & Co., Rotherham -	Grange Lane -	,, -	,,
9. Hinchliffe, Brämham, & Co., Rotherham	Greasbrough -	,, -	,,
10. Thomas Smith, Rawmarsh - -	Green Lane - -	,, -	Sinking.
11. Greenfield Co., Rotherham - -	Greenfield -	,, -	Coal.
12. Rotherham, Masbro', & Holmes Coal Co., Rotherham.	Holmes - - -	,, -	-
13. Moses Law, Kimberworth, Rotherham	Jordan - -	,, -	Sinking.
14. J. and J. Charlesworth, Rotherham -	Kilnhurst - -	,, -	Coal.
15. Jos. Warris, Rotherham - -	Kimberworth -	,, -	Sinking.
16. Manvers Main Co., Mexbro', Rotherham	Manvers Main -	,, -	Coal.
17. Hawkins, Hague, & Twigg, Rawmarsh	Netherfield - -	,, -	Sinking.
18. Newhill Coal Co., Wath, Rotherham	Newhill - -	,, -	Coal.
19. Earl Fitzwilliam, Elsecar, Barnsley -	Park Gate - -	,, -	Coal and ironstone
20. J. Knapton, Rotherham - -	Rawmarsh -	,, -	Coal.
21. Thomas Smith - - - -	Rawmarsh - -	,, -	,,
22. Cooper, Sellars & Co., Rotherham -	Roundwood - -	,, -	,,
23. Jos. Pilley, Rotherham - -	Thorpe Hesley -	,, -	Sinking.
24. J. and J. Charlesworth, Rotherham -	Thrybergh Hall -	,, -	Coal.
25. Benjamin Huntsman, Rotherham -	Tinsley Park -	,, -	,,
26. J. and J. Charlesworth, Rotherham -	Warren Vale -	,, -	,,
27. Skinner and Holford, Beighton, Sheffield.	Waleswood -	,, -	,,
28. W. B. Law, Melton, Rotherham -	West Melton -	,, -	,,
29. Wath Main Coal Co., Wath, Rotherham	Wath Main - -	,, -	Sinking.
1 opened, None closed } Total 29.			

List of Mines in Mr. Wardell's District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
1. W. H. Stone, Aston, Sheffield	Aston Main	Sheffield	Coal.
2. Skinner and Holford, Beighton, Sheffield.	Beighton	"	"
3. John Helliwell, Deepcar, Sheffield	Bracken Moor	"	"
4. Pitsmoor Coal Co., Sheffield	Brightside	"	"
5. Lord Wharncliffe, Wortley, Sheffield	Bromley Main	"	Sinking.
6. J. Helliwell, Sheffield	Busk Flatt	"	"
7. G. Chambers and Son, Ecclesfield, Sheffield.	Butterthwaite	"	"
8. Executors of Jas. Grayson, Deepcar, Sheffield.	Bracken Moor	"	"
9. J. Platts, Chapeltown, Sheffield	Chapeltown	"	Coal.
10. Jas. Grayson, Deepcar, Sheffield	Clough	"	Sinking.
11. J. Gregory, Deepcar	Clough	"	"
12. John Armitage, Sheffield	Deepcar	"	Coal.
13. Haigh & Co., Sheffield	Dungworth	"	"
14. Grayson, Lowood & Co., Deepcar, Sheffield.	Deepcar	"	Coal and ironstone, and clay.
15. J. Lloyd, Sheffield	Eccleshall	"	Sinking.
16. John Denton & Co., Sheffield	Grimesthorpe	"	Coal.
17. C. Marsden, Stannington	Hall Park	"	Sinking.
18. John Armitage, Deepcar, Sheffield	Henholmes	"	Coal.
19. Jos. Hattersley, Bolterstone, Sheffield	Holly Bush	"	"
20. Kiveton Park Coal Co., Kiveton Park, Sheffield.	Kiveton Park	"	"
21. J. Johnson, Sheffield	Lower Wincobank	"	"
22. Nunnery Colliery Co., Sheffield	Manor	"	Sinking.
23. Grayson, Lowood, & Co., Sheffield	Malin Bridge	"	Coal and ironstone.
24. T. W. Roome, Sheffield	Meadow Fire-clay Mine.	"	Sinking.
25. John Lee, Sheffield	Midhope Stones	"	"
26. G. Longden & Son, Neepsend	Myers Lane	"	"
27. M. Wilkinson, Handsworth, Sheffield	Myrtle Spring	"	"
28. Nunnery Colliery Co., Sheffield	New Winning	"	Coal.
29. Staveley Coal and Iron Co., Sheffield	North Staveley	"	"
30. Fence Coal Co., Fence, Rotherham	Orgreave	"	"
31. Benjamin Huntsman, Sheffield	Sheffield	"	"
32. Samuel Fox & Co., Deepcar, Sheffield	Stockbridge	"	Coal and fire-clay.
33. Russell & Co., Oughtibridge, Sheffield	St. Davids	"	Coal.
34. Grayson, Lowood, & Co., Sheffield	Stannington	"	Coal and fire-clay.
35. T. W. Rhodes, Handsworth, Sheffield	Stubbin Lane	"	Sinking.
36. Mrs. Grayson, Deepcar, Sheffield	Spink Hall	"	"
37. Newton, Chambers, & Co., Chapeltown, Sheffield.	Tankersley	"	Coal and ironstone.
38. Ditto	Thorncliffe	"	" "
39. Geo. Darwent, Sheffield	Thurgoland	"	Coal.
40. E. Swift, Sheffield	Vernon Silkstone	"	Sinking.
41. J. Beaumont, Oughtibridge, Sheffield	Wharncliffe	"	Coal and clay.
42. Silica Fire Brick Co., Oughtibridge, Sheffield.	Wharncliffe Wood	"	Coal and clay, and ironstone.
43. Jas. Holmes, Sheffield	Wincobank	"	Sinking.
44. Industrial Coal & Iron Co., Sheffield	Woodhouse	"	"
45. John Rhodes, Sheffield	Woodthorpe	"	Coal.
46. Andrews & Co., Sheffield	Wortley, Silkstone	"	"
47. John Crowley & Co., Sheffield	Wincobank	"	"
48. E. Hobson, Sheffield	Wadsley	"	Coal and ironstone.
49. Benjn. Jackson, Bolsterstone, Sheffield	Shaw House	"	Coal.
2 closed None opened } Total 49.			
1. Messrs. Haigh, Wakefield	Alverthorpe	Wakefield	"
2. Thos. West, East Ardsley	Blackgates	"	Sinking.
3. J. and J. Charlesworth, Lofthouse, Wakefield.	Bottom Boat	"	Coal.
4. Messrs. Jaggar, Wakefield	Bretton	"	"
5. R. Sidebottom	Broadroyd, Crigglestone.	"	"
6. G. and W. Rhodes, Netherton, Wakefield.	Bullcliffe	"	Sinking.
7. Chevet Coal Co., Walton, Wakefield	Chevet	"	"
8. W. Gartside, Assett, Wakefield	Dewsbury Lane	"	Coal.
9. Thos. Firth & Co., Wakefield	Dirtcar	"	"

LIST of MINES in MR. WARDELL'S DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
10. East Ardsley Co-operative Coal Co., Wakefield.	East Ardsley -	Wakefield -	Coal.
11. J. Roberts & Co., Wakefield -	" -	" -	"
12. Messrs. Jaggar, Wakefield -	Emley Moor -	" -	"
13. Edward Stringer, Wakefield -	Emley Park -	" -	"
14. Stansfeld & Co., Wakefield -	Emroyd -	" -	"
15. G. and J. Haigh, Wakefield -	Field Lane -	" -	"
16. Sir J. L. L. Kaye, Bart., Wakefield -	Flockton -	" -	"
17. Stansfeld & Co., Wakefield -	" -	" -	"
18. Lockwood & Co., Wakefield -	" -	" -	"
19. Beacher and Jarvis, Overton, Wakefield.	" -	" -	"
20. Messrs. Jaggar, Wakefield -	Flockton Moor -	" -	"
21. G. and J. Haigh, Wakefield -	Gawthorpe -	" -	"
22. Sir J. L. L. Kaye, Bart., Wakefield -	Grange -	" -	"
23. Jesse Jaggar, Wakefield -	Grange Ash -	" -	"
24. Stansfeld & Co., Wakefield -	Grange Moor -	" -	"
25. B. Lockwood, Wakefield -	" " -	" -	"
26. Flockton Coal Co., Netherton, Wakefield.	Hartley Bank -	" -	"
27. Cliff Coal and Fire-clay Co., Crigglestone, Wakefield.	Hollingthorpe -	" -	"
28. John Roberts, Upper Whittey, Wakefield.	Hunt Royal -	" -	"
29. Powell & Stephenson, Horbury -	Jenkin Bank -	" -	Sinking.
30. Jas. Auty, East Ardsley, Wakefield -	Kirkham Gate -	" -	"
31. J. Roberts & Co., Wakefield -	Low Laiths -	" -	Coal.
32. Leeds and Yorkshire Co-operative Co., Wakefield.	Lofthouse -	" -	Sinking.
33. J. and J. W. Woodhead, Wakefield -	Manor -	" -	Coal.
34. J. and J. Charlesworth, Wakefield -	Milnthorpe -	" -	"
35. Ditto ditto -	Newmarket -	" -	"
36. Executors of late Charles Winn, Nostell, Wakefield.	Nostell -	" -	"
37. G. and J. Haigh, Wakefield -	Ossett -	" -	"
38. Whitworth & Co., Birchin Lane, Ossett, Wakefield.	Oxclose -	" -	Sinking.
39. Hargreaves, Naylor, & Co., Ossett, Wakefield.	Pildacre -	" -	Coal.
40. Leeds, Morley, and District Co-operative Co., Wakefield.	Providence -	" -	"
41. John Shires & Co., Stanley, Wakefield	Perseverance -	" -	Sinking.
42. G. and J. Haigh, Wakefield -	Ravensthorpe -	" -	Coal.
43. Terry, Greaves, & Co., Wakefield -	Roundwood -	" -	"
44. H. Lodge, Wakefield -	Ryhill -	" -	Sinking.
45. Geo. Bailey, Wakefield -	St. John's -	" -	Coal.
46. New Sharlston Coal Co., Wakefield -	Sharlston -	" -	"
47. Hargreaves & Co., Wakefield -	Snapethorpe -	" -	"
48. R. Hudson & Co., Wakefield -	Stanley -	" -	"
49. Sir J. L. L. Kaye, Bart., Wakefield -	Stocksmoor -	" -	"
50. R. Hudson & Co., Wakefield -	Victoria -	" -	"
51. J. Roberts & Co., Wakefield -	West Ardsley -	" -	"
52. Joshua Wilby, Ossett, Wakefield -	West Field -	" -	"
53. J. Naylor & Co., Wakefield -	Westgate Moor -	" -	Sinking.
54. J. and J. Charlesworth, Wakefield -	Woodmoor -	" -	Coal.
55. C. Overend, Crigglestone -	Woollen Well Main -	" -	Sinking.
56. D. Micklethwaite & Co., Wakefield -	Wrenthorpe -	" -	Coal.
57. Hargreaves, Naylor, & Co., Wakefield.	Whinny Moor -	" -	"
58. Walton Coal Co., Wakefield -	Walton -	" -	Sinking.
59. Woodmoor Coal Co., Crigglestone, Wakefield.	Woodmoor -	" -	"
60. G. and T. Sheard, East Ardsley, Wakefield.	Woodhouse Lane -	" -	"
1 opened } Total 60. 2 closed }			
520 Total Collieries in Yorkshire.			

List of Mines in Mr. Wardell's District, 1875—*continued.*

LINCOLNSHIRE.

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
1. Cliff and Sons, Frodingham - -	Frodingham - -	Brigg - -	Ironstone.
2. Kiveton Park Co., Kiveton Park -	Kirton - -	,, - -	,,
3. W. H. and G. Dawes - -	Scunthorpe - -	,, - -	,,
4. Ditto ditto - -	Trent - -	,, - -	,,
5. West Yorkshire Coal and Iron Co., Leeds.	Claxby - -	Lincoln -	,,
6. Cliff and Sons, Leeds - -	Appleby - -	Brigg - -	,,
7. Chas. Winn, Frodingham -	Frodingham - -	,, - -	,,
8. Park Gate Iron Co., Frodingham -	,, -	,, - -	,,
9. Mid-Lincolnshire Iron Co. -	Monk's Abbey -	Lincoln -	,,
10. Ditto ditto - -	Greetwell - -	,, - -	,,

Mr. Wardell's Report.

REPORT on the WORKING of the METALLIFEROUS MINES REGULATION ACT, 1872, 35 & 36 VICT., c. 77.—By FRANK N. WARDELL, Esq., F.G.S.

Wath, Rotherham,
SIR, 28th March 1876.

I HAVE the honour to report to you, as an Inspector of Metalliferous Mines, that the working of this Act seems to be satisfactory at those mines assigned to me.

The produce of these mines is lead, and the number of persons employed in the production 252, only 17 of whom are under 18 years of age.

There have been no fatal accidents during the past year, and so far as I have yet seen there is every desire to carry out the provisions of the Act. I have no further special remarks to offer, and have the honour to be

Sir,

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State.

Your most obedient Servant,
FRANK N. WARDELL.

LIST OF MINES classed under the METALLIFEROUS MINES REGULATION ACT, in MR. WARDELL'S DISTRICT, 1875.

Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situated.	Remarks.
W. Sykes Ward, Kettlewell	Old Providence	Kettlewell.	
Grimwith Mining Co., Skipton	Grimwith	Skipton.	
Duke of Devonshire, Skipton	Grassington	Ditto.	
Ditto ditto	Cononley	Ditto.	
Joseph Mason, Linton	Elbolton	Ditto.	
Persevering Mining Co., Linton	Persevering	Blubberhouses Moor.	
Pateley Bridge Lead Mines and Smelting Co., Pateley Bridge.	Pateley Bridge	Pateley Bridge.	
Hebdon Moor Mining Co., Pateley Bridge.	Hebdon Mo r	Hebdon Moor.	
J. F. Masser, Kettlewell	Silver Rake	Kettlewell.	
Wharfedale Mining Co., Pateley Bridge.	Wharfedale	Pateley Bridge.	
G. Sharpe, Pateley Bridge	West Craven Moor	Ditto.	
E. J. Armstrong, Pateley Bridge	Ramsgill	Ditto.	
E. Newbould, Greenhow Hill	Foley Gill.		
Lodge, Marshall, and Bowdin, Starbottom.	Gravel	Skipton.	

Mr. Hall's Report.

REPORT on the INSPECTION of MINES in the WEST LANCASHIRE and NORTH WALES INSPECTION DISTRICT, from the 31st December 1874 to the 31st December 1875.—By HENRY HALL, Esq.

SIR, Rainhill, 27th March 1876.

As Inspector of Mines for the Liverpool district, comprising West Lancashire and North Wales, I have the honour to lay before you my report for the year ending the 31st December 1875.

	1875.	1874.	Average since 1872.
Number of persons employed - -	45,136	43,658	42,979
Quantity of mineral raised in 1875:			
Coal - - 11,398,032 tons			
Fireclay - 40,430 „			
Ironstone - 20,151 „	11,460,965	9,976,882	10,132,732
Shale - - 2,352 „			
Number of separate fatal accidents -	111	95	98
Number of lives lost - - -	129	115	120
Persons employed per separate fatal accident - - - -	407	460	439
Persons employed per life lost - -	349	380	359
Quantity of mineral raised per separate fatal accident - - -	103,252	105,020	103,443
Quantity of mineral raised per life lost -	88,845	86,755	84,531

From this statement it will be seen that the quantity of mineral raised in 1875 exceeds 1874 by 1,484,083 tons, and the number of lives lost exceeds 1874 by 14. The mineral raised per life lost in 1875 is slightly better than in 1874, also a little higher than the average since the passing of the "Mines Regulation Act, 1872," but when compared with other inspection districts this result appears very unsatisfactory.

The following tabular statement shows the various circumstances under which accidents have occurred, and the number of lives lost during the year:

1875.	Explosions of Firedamp.	Falls in Mine.			In Shafts.									Miscellaneous Underground.								On Surface.				Gross Total.
		Falls of Side.	Falls of Roof.	Total Falls in Mine.	Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending.	Falling into Shaft from surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery underground.	Sundries underground.	Total Miscellaneous underground.	By Machinery on surface.	Boilers bursting.	Miscellaneous on surface.	Total on surface.	
West Lancashire -	1	14	40	54	2	—	8	2	—	4	5	4	25	—	1	—	—	1	5	3	1	11	2	—	13	15	106
North Wales - -	5	5	3	8	—	—	—	—	—	1	1	2	4	—	—	—	—	—	3	—	—	3	—	—	3	3	23
	6	19	43	62	2	—	8	2	—	5	6	6	29	—	1	—	—	1	8	3	1	14	2	—	16	18	129

Thus six deaths have been due to explosions of gas, 62 to falls of roof and coal, 29 to accidents in shafts, 14 to miscellaneous causes underground, and 18 to various kinds of accident on the surface, making a gross total of 129.

Explosions of Fire-damp.

The first occurred at Bersham Colliery, near Wrexham, on the 22nd January, causing the death of one person.

Two day-wage men were employed in an air-way in the vicinity of a blower of gas. This blower seems gradually to have fouled the air current passing to them, and, on its becoming

explosive, fired at one or other of the two Davy safety-lamps they were using. Both men were seriously burnt, but one recovered.

The evidence at the inquest appeared to be very unwillingly given, and it was impossible to discover how the gas became ignited. I tested the lamps in the condition in which they were stated to have been found immediately after the accident, but they proved to be quite safe in an explosive atmosphere. I also made an examination of the colliery, and found that the vein being worked is subject to blowers of fire-damp; that the ventilation passing round the district where the explosion took place was unsatisfactory. The manager stated that there had been a recent closing of an air-way, which caused it to be in that condition.

The "second" explosion occurred on June 3rd, at the Hafod-y-bwch Colliery, the property of the "Ruabon Coal Co., Limited," and resulted in the death of three persons. The main coal seam in which this accident occurred is 500 yards from the surface, and is one of several being worked. The scene of the explosion was about 200 yards from the bottom of the pit.

The following was the principal evidence taken at the inquiry:—

"Joseph Griffiths, son-in-law of the deceased William Jones, and the only man living of "the three who were in the first explosion, said,—I knew the deceased. I went down about "five minutes to six on the morning of the explosion. I saw Philips in the lamp-room, and "he said there was a little gas on the left-hand side of William Jones' old place. I went "to William Jones' place about a quarter to eight. The cloth was all right at the time. "I did not see any gas at the place where Philips said there was some. They had got a "slanting hole on the bottom ready for stemming; it was 22 inches deep. I put "the cartridge in about eight o'clock. There was eight or nine inches of powder. We put "powder in according to the strength of the ground. This ground was soft, right in the "fault, and had many slips in it. It was stemmed in the usual way by William Jones and "Thomas Hesketh. It was my duty to see that it was properly stemmed, and, according to "my judgment, this hole was stemmed properly. I fired it about a quarter or twenty "minutes past eight. I examined to see if there was gas before firing, but there was no gas "visible. I saw the report produced the same morning. I never examine the report book; "it is not my duty. John Roberts, the overman, would take charge of the book. The "stemming was blown out. I at the time, being near the place in which it had been, reported "there was gas. The blaze came on us, knocked the cloth down, and we were burnt. I "was, of the three, the greatest distance from the shot. The hole could not have been "stemmed properly. The gas must have come from a fresh 'feeder.' I am certain there "was no gas before. If the hole had been stemmed properly there would not have been an "explosion.

"In answer to Mr. Hedley.—At the time I was sitting behind a corner, the other two men "were in the main road. When I went down in the morning, I did not see any 'danger "signal.' The hole was bored in a slanting direction downwards. Immediately before "firing I examined the place where Philips said there was gas. I also examined the other "places but I found no gas. The ventilation was good when the cloth was right. I have "never seen gas in Jones' place, but I have seen it on the left side, when the cloth was "down.

"By the Foreman.—I had a conversation with Hesketh and Jones before firing the "shot. I told them I had been told there was gas, and they said if there was danger they "would rather the shot should not be fired, &c. &c.

"Thomas Philips said,—I went down on the 2nd June at six o'clock. I am night fireman "in the Main Coal No. 2 pit, and at four o'clock on the following morning I examined "William Jones' place. I saw Edward Jones and had some conversation as to William "Jones' place. I told him the place was clear, excepting a little bit of gas in the top of the "'fault.' I did not see if there were any shot holes in the face. About six I told Joseph "Griffiths there was a little gas in the place named. I saw him on the bank. I have seen "the place since. The 'slip' or 'fault' was about ten yards from the face. I was up the "old disused road, near William Jones place, about three weeks ago, but there was no gas. "I saw the gas on the 3rd in a slip in the roof. The gas might have accumulated because "the cloth was out of order. I repaired the cloth, but did not have the gas cleared away. "I did not know that it was my duty to do so. My duty is to see if there is any gas, and "give notice of it, and not to clear it away. I gave notice first to Edward Jones.

"Mr. Hall (H.M. Inspector), said,—That since the explosions, this particular district of "the mine had been 'stopped off,' so that it had been impossible to make any useful "examination of it. There was nothing in the evidence to lead him to suppose that the "explosion had been caused by what was called a 'blown out shot.' And even if this had "occurred, there could not have been any serious and instantaneous liberation of gas from "the roof or from the coal itself. But it might drag standing gas from the immediate "neighbourhood. It seemed clear from the evidence of Philips that there was gas in William

" Jones' place on the morning of the explosion, and within four hours of its occurring. He " also believed that there was an accumulation of gas in the left-hand disused road. Shots " should never be fired in the immediate neighbourhood of gas, or anywhere where gas was " likely to have collected; neither should shots be fired near an old 'gob' or old working. " In this case the shot was fired under these circumstances."

Verdict.—" That William Jones and Hesketh had been killed by an explosion caused by " the firing of a shot, and that John Roberts had been killed by an explosion, but how " caused there was not sufficient evidence to show. The Jury wished to express their " opinion that the present system of reporting by the firemen was most defective."

Note.—John Roberts was killed by an explosion which occurred whilst he and others were exploring immediately after the first accident.

This occurrence shows that blasting is permitted by some managers under circumstances such that, with the utmost care on the part of those actually engaged in the work, a mishap may occur at any time. In the North of England blasting is seldom permitted when working " broken," or taking out pillars. But in North Wales the practice is almost universal.

The " third " explosion of fire-damp took place on the 19th October, at Bryn-yr-Owen Colliery, the property of the Coalbrookdale Iron Co., and caused the death of one person.

Explosive gas had collected in a disused road, and a fireman, accompanied by a young boy (the fireman carrying a safety-lamp and the boy a candle), had occasion to pass this part of mine. The gas ignited at the exposed light, severely burning the boy himself, and fatally injuring a young man employed as a drawer.

This accident was marked by very great carelessness, and shows the folly of carrying naked lights about mines where firedamp is met with.

" The " fourth " occurred on the 4th November at Bradley Hall Colliery, near Standish, owned by Messrs. B. and R. Fisher, also causing the death of one person. Workmen were engaged driving a drift from one seam to another. They used candles, but had also a safety-lamp to examine with, after any cessation of work. Firedamp collected whilst they were at supper, and they omitted to take the precaution of entering with the lamp first, when they were ready to start again. The consequence was that the gas ignited, burning one of them so seriously that he died shortly afterwards.

It having been stated at the inquest that gas had been seen the day previous, proceedings were instituted against the manager for a breach of No. 1 General Rule. The summons was dismissed, the magistrates stating that they considered there was a doubt whether the " working " was properly ventilated or not.

This last is the only fatal explosion of firedamp that has occurred in the Lancashire part of the district during the year, and bearing in mind the dangerous character of many of the mines being worked, such a result is highly satisfactory.

Falls of Roof and Sides.

Fifty-eight separate accidents of this class have occurred, causing the death of 62 persons.

This is a most serious loss of life, and very much higher, in proportion to the quantity of coal raised, than most other of the Inspection Districts. I believe that a great improvement is possible under this head.

In Lancashire the whole responsibility of timbering and keeping the working places safe is thrown upon the miners themselves. This seems to have always been the custom in this district, and is accounted as safe or safer than any other; but if we compare the results of the different practices, Lancashire seems far behind.

I have endeavoured to impress upon the managers the necessity of keeping a supply of suitable timber in each working-place, so that there may be no temptation to postpone fixing it, immediately it is seen to be needed. The present plan of bringing it only as far as the " shunts " is open to great objection, because these " shunts " are always some distance from the workmen, and in some cases they are situated at the bottom of inclines which are worked by machinery, frequently causing delay and trouble before a supply can be procured.

Accidents in Shafts.

There are 29 deaths to record under this head.

The most serious accident occurring at the Alexandra pit, belonging to the " Wigan Coal and Iron Co., Limited," in which seven persons lost their lives. A copy of the evidence taken at the inquest has already been forwarded to the Home Office.

A serious case of overwinding took place at the Havannah Colliery belonging to Messrs. Richard Evans and Co. Various inventions have been brought before the public with a view to the prevention of this description of accident, but they all deal with the accident after it has arisen. The most desirable arrangement would perhaps be some automatic gearing in connection with the winding engine, to prevent the cage being wound beyond a certain fixed point.

Miscellaneous Accidents Underground.

Fourteen deaths have been due to this class of accident.

The most serious was the explosion of a boiler at Messrs. Pearson and Knowles' Moss Pits, by which three persons were scalded to death.

The boiler was covered, with a view to economize steam. The leakage from a steam-pipe connection dripped upon and, saturating the covering, gradually corroded one of the plates to such an extent that it gave way under the ordinary working pressure.

Covering boilers underground, where they are not exposed to the weather and where the temperature of the surrounding air is usually high, is placing a difficulty in the way of thorough examination, to very little, if any, useful purpose.

The remaining accidents under this head have arisen in various ways. Many of them from pure "misadventure;" others by want of care on the part of the sufferers themselves. Some men feel a kind of pride in braving risks, and often run needlessly into danger.

Accidents on the Surface.

There are 18 deaths to report from this source, 14 of which have occurred to persons engaged in moving wagons about screens and on railway sidings.

This work is generally dangerous, but is to a great extent under the control of those engaged in it.

General Remarks.

Penalties.—Proceedings have been instituted against the manager of the Royal Colliery, St. Helen's, for omitting to appoint a competent person to examine a pit in course of being sunk, previous to the sinkers commencing work, as required by No. 3 General Rule. He was fined 10*l.* and costs. The contractor engaged in the sinking was also fined 10*l.*

In making the "daily report" as to the safety of sinking pits where the work is done by contract, it is well to employ an independent person on behalf of the manager to make the inspection in conjunction with the contractor himself, each signing such report, so that the contractor may not be relieved of his proper share of the responsibility.

Working Hours.—Two or three cases have come under my notice where boys under 16 years of age have been kept underground beyond the limit of 10 hours per day. At Norley Hall Colliery, near Wigan, this has occurred twice, the second time after a promise from the manager to discontinue the practice.

Discipline.—There is no source of danger in mines so great as want of discipline.

I am sorry to report that at many collieries in North Wales there is a sad want of attention to this subject. Workmen are allowed to change their safety-lamps with each other as often as they choose, many of them using a different lamp each day they work, the result being that it is impossible, in case of any neglect or injury, to discover the offender.

Loose gunpowder is handed to the workmen on the pit-bank without instructions as to how, when, or where it is to be converted into cartridges.

There seems to be a general desire to throw the "onus" of management on to the workmen themselves. The excuse urged being that men are difficult to deal with.

I believe that a capable and attentive manager may soon gain the respect of his workmen, and if he takes care to impress danger upon them, they will be, as a rule, quite willing to submit to measures of precaution.

These remarks must not be considered to apply to the North Wales collieries without exception.

Use of Gunpowder.—I deem it my duty to call attention to a comparatively recent innovation in the Lancashire part of this district, viz., the use of an unusually large charge of gunpowder in blasting coal, amounting in some instances to $2\frac{1}{4}$ lbs., this large quantity being needed in consequence of the discontinuance of nicking or cutting the coal-face where it has to be used.

The practice has been constantly condemned by my predecessors, and is considered by many eminent mining engineers to be a fruitful source of explosions.

It is urged in justification, that the coal is so hard that the workmen cannot and will not cut it.

But I think the fact that two or three owners have already made a stand against the custom, and have accomplished their object with very little difficulty, is the best proof we could have to the contrary.

The sooner the better others follow their good example, for it seems hardly necessary to point out to mining men that in "shooting fast" there is greater liability to "blown-out shots;" and these occurring where $2\frac{1}{4}$ lbs., of powder is being used, the mechanical effect on the ventilation in narrow winnings may lead to very serious results.

Education.—The provision made for the education of the mining population is generally good throughout the district.

A great step has been made during the year, in the extension and increased efficiency of the "Wigan Mining and Mechanical School," towards securing to young engineers an opportunity of gaining a higher and more scientific education.

In the performance of my duties I have endeavoured to obtain the support of managers and mine owners, feeling that without their co-operation the results of an Inspector's work would not prove so satisfactory.

Mr. Hedley has ably assisted in the work of the district during the year.

I have, &c.,

HENRY HALL.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Whitehall, London.

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the WEST LANCASHIRE DISTRICT, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1875.														
Jan. 8	1	Bold - -	St. Helen's Jnct.	Orrell Coal & Cannel Co., Limited.	Charles Jones -	Sinker -	23	Struck on head by winch handle -	–	–	–	–	1	1
„ 11	2	Platt Lane -	Wigan - -	Wigan & Whiston Coal Co.	James Roper -	Collier -	24	Fall of roof - - -	–	1	–	–	–	1
„ 17	—	California -	Ditto - -	Wigan Coal & Iron Co., Limited.	Peter Houghton -	Ditto -	72	Fall of roof. Died to-day from injuries received September 11th last year.	–	1	–	–	–	1
„ 18	3	Elms - -	Ditto - -	Dewhurst, Hoyle, & Smethurst.	Wm. Redford -	Ditto -	60	Fall of roof - - -	–	1	–	–	–	1
„ 21	4	Platt Lane -	Ditto - -	Wigan & Whiston Coal Co.	Wm. Ledsforth -	Ditto -	30	Fall of roof - - -	–	1	–	–	–	1
„ 26	5	Victoria - -	Rainford -	Victoria Colliery Co., Limited.	Jos . Shaw - -	Hooker on -	16	Fell from mouthing in shaft - -	–	–	1	–	–	1
„ 28	6	Mesnes - -	Wigan - -	W. & J. Turner - -	Patrick Lysaght -	Drawer -	18	Injured his chest while pushing tub	–	–	–	1	–	1
Feb. 1	7	Prospect -	Ditto - -	Wigan Coal & Iron Co., Limited.	Ricd. Ryding -	Fireman -	38	Fall of roof - - -	–	1	–	–	–	1
„ 2	8	Whiston -	Whiston - -	Wigan & Whiston Coal Co.	Benjm. Smith -	Collier -	33	Fall of coal - - -	–	1	–	–	–	1
„ 3	9	Pemberton -	Wigan - -	J. Blundell & Sons - -	Henry Betts -	Brakesman	18	Run over by waggons - -	–	–	–	–	1	1
„ 5	10	Havannah -	Haydock -	Richd. Evans & Co. -	George Webster -	Dataler -	33	Fall of roof - - -	–	1	–	–	–	1
„ 9	11	Gillers Green -	Eccleston -	Gillers Green Colliery Co., Limited.	John Brophy -	Collier -	23	Fell out of hoppet whilst ascending shaft.	–	–	1	–	–	1
„ 24	12	Ashton's Green	St. Helens -	Hy. Bramall & Co. - -	Thos. Frodsham -	Dataler -	54	Fall of roof - - -	–	1	–	–	–	1
„ 26	13	Park Lane -	Wigan - -	Garswood Coal & Iron Co., Limited.	Thos. Gerrard -	Collier -	58	Fall of roof - - -	–	1	–	–	–	1
Mar. 3	14	Deep Pit -	Hindley -	Wigan Coal & Iron Co., Limited.	Henry Lockyer -	Ditto -	35	Fall of roof - - -	–	1	–	–	–	1
„ 6	—	Pemberton -	Wigan - -	Jonathan Blundell & Sons	John Howe -	Ditto -	26	Fall of roof. (Died to-day from injuries received on the 12th March last year.	–	1	–	–	–	1
„ 10	15	Gidlow & Swinley	Ditto - -	Rylands, Sons, & Co., Limited.	Josh. H. Gaskell -	Ditto -	21	Fall of roof - - -	–	1	–	–	–	1
„ 13	16	Do. -	Ditto - -	Ditto - - -	John Wilson -	Ditto -	28	Fall of roof - - -	–	1	–	–	–	1
„ 15	17	Tawd Vale -	Skelmersdale -	Tawd Vale Colliery Co., Limited.	Thos. Rimmer -	Labourer -	40	Run over by locomotive - -	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1875.														
Mar. 16	18	Park Lane -	Wigan - -	Garswood Coal and Iron Co., Limited.	Wm. Bennett -	Brakesman	25	Run over by waggons - -	–	–	–	–	1	1
„ 27	19	Blaguegate -	Skelmersdale -	Lord Skelmersdale -	Ed. Platt - -	Engineman	39	Whilst fixing steam pipes in shaft, was knocked off cage, owing to a chain breaking.	–	–	1	–	–	1
„ „	20	Ravenhead -	St. Helens -	Ravenhead Coal Co., Limited.	Wm. Pennington -	Collier -	26	Fall of coal - - - -	–	1	–	–	–	1
„ „	21	Bickenshaw -	Abram - -	Ackers, Whitley, & Co., Limited.	Thos. Hughes -	Sinker -	40	Fell from scaffold in sinking pit -	–	–	1	–	–	1
Apr. 6	22	Havannah -	St. Helens -	Richd. Evans & Co. -	Edward Kay -	Collier -	25	Overwinding - - - -	–	–	–	2	–	2
					John Francis -	Ditto -	30							
„ 8	23	Douglas Bank -	Wigan - -	Rose Bridge & Douglas Bank Colliery Co., Limited.	William Holland -	Ditto -	25	Fall of roof. Died September 15th	–	1	–	–	–	1
„ 14	24	Gidlow & Swinley	Ditto - -	Rylands, Sons, & Co., Limited.	Peter Winrow -	Labourer -	70	Crushed between waggons and screen	–	–	–	–	1	1
„ 15	25	Low Hall -	Ditto - -	Moss Hall Coal Co., Limited.	Hy. Cronchley -	Dataler -	45	Fall of roof - - -	–	1	–	–	–	1
„ 23	26	Park Lane -	Ditto - -	Garswood Coal & Iron Co., Limited.	Hy. Derbyshire -	Collier -	20	Fall of roof - - - -	–	1	–	–	–	1
„ „	—	Norley -	Ditto -	Norley Coal & Cannel Co.	James Anderton -	Ditto -	30	Fall of roof. Died to-day from injuries received on June 26th last year.	–	1	–	–	–	1
„ 28	27	Lindsay - -	Ditto - -	Wigan Coal & Iron Co., Limited.	Charles Marsh -	Ditto -	49	Fall of roof - - -	–	1	–	–	–	1
May 5	28	Shevington -	Shevington -	J. Tayleur & Co. -	Thos. Barnes -	Dataler -	23	Suffocated by firedamp - -	–	–	–	1	–	1
„ 6	29	New Boston -	Haydock -	Richd. Evans & Co. -	Wm. Wright -	Ditto -	32	Fall of roof - - -	–	1	–	–	–	1
„ 8	30	Meadows -	Wigan - -	Lamb and Moore - -	Ed. Benson - -	Furnaceman	66	Signal rods fell down pit, striking deceased, who was in cage.	–	–	1	–	–	1
„ 17	31	Carrs - -	Prescot - -	Carrs Colliery Co., Limited	Wm. Howarth -	Fireman -	33	Fell from hoppet while ascending shaft.	–	–	1	–	–	1
„ 18	32	Ince Hall -	Wigan - -	Ince Hall Coal & Cannel Co., Limited.	George Howells -	Dataler -	34	Fall of roof - - - -	–	1	–	–	–	1
„ „	33	Whiston -	Prescot - -	Wigan & Whiston Coal Co.	Jas. Baldwin -	Collier -	35	Fall of roof - - -	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1875.														
May 25	34	Stonehouse	Hindley Green	J. & T. Wood	Jas. Talbot	Hooker on	35	Fell from 3 ft. mine mouthing to bottom.	–	–	1	–	–	1
„ 28	35	Lindsay	Wigan	Wigan Coal & Iron Co., Limited.	Patrick Bowrey	Dataler	49	Crushed by tubs	–	–	–	1	–	1
June 8	36	California	Do.	Ditto	John Lancaster	Drawer	22	Fall of roof	–	1	–	–	–	1
„ 11	37	Old Boston	St. Helens	Richd. Evans & Co.	Wm. Leavy	Collier	27	Fall of roof	–	1	–	–	–	1
„ „	38	Crawford	Wigan	Wigan Coal & Iron Co., Limited.	Ed. Gorton	Labourer	21	Caught between waggon buffers	–	–	–	–	1	1
„ 12	39	Ladies Lane	Do.	Ditto	Jas. Gregory	Collier	28	Fall of roof	–	1	–	–	–	1
„ 17	—	Royal	St. Helens	John Cross	John Naylor	Sinker	32	Suffocated in foul gas	–	–	–	1	–	1
„ 18	40	Bold	St. Helen's Jnc.	Orrell Coal & Cannel Co., Limited.	John Ryan	Engineman	20	Fell down pit	–	–	1	–	–	1
„ 25	41	Rose Bridge	Wigan	Rose Bridge & Douglas Bank Colliery Co., Limited.	Wm. Leigh	Drawer	22	Fall of roof	–	1	–	–	–	1
„ 30	42	Alexander	Do.	Wigan Coal & Iron Co., Limited.	Wm. Redman	Sinker	27	Fall of roof	–	1	–	–	–	1
July 6	43	Leigh	Haydock	Richd. Evans & Co.	Brian Collins	Dataler	25	Fall of coal	–	1	–	–	–	1
„ „	44	Strangeways Hall.	Wigan	Crompton & Shawcross	Josh. Green	Collier	24	Fall of roof	–	1	–	–	–	1
„ 10	45	Park Lane	Do.	Garswood Coal & Iron Co., Limited.	Peter Flint John Jones	Sinker Ditto	36 22	Lowered down sinking pit too quickly	–	–	2	–	–	2
„ 15	46	Gillers Green	Eccleston, St. Helens.	Gillers Green Colliery Co., Limited.	Thos. Bibby	Engineman	22	Found drowned at bottom of sinking pit.	–	–	1	–	–	1
„ 17	47	Lindsay	Wigan	Wigan Coal & Iron Co., Limited.	Wm. Grime	Breaksman	28	Run over by waggons	–	–	–	–	1	1
„ 24	48	St. Helens	St. Helens	Pilkington, Bros.	Josh. Fradsom	Dataler	18	Crushed between tub and prop	–	–	–	1	–	1
„ 28	49	Moss	Wigan	Pearson & Knowles Coal & Iron Co., Limited.	Wm. Bell Thos. Meadows George Draper	Stoker Engineman Labourer	41 52 14	Bursting of boiler	–	–	–	3	–	3
„ „	50	Nutgrove	St. Helens	Jas. Radley	Saml. Hilton	Collier	22	Fall of roof	–	1	–	–	–	1
Aug. 2	51	Queen Pit	Haydock	Richd. Evans & Co.	Wm. Harris	Ditto	28	Fall of coal	–	1	–	–	–	1
„ 17	52	Edge Green	Golborne	Ditto	Thos. Ridyard	Proptaker	53	Fall of roof	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1875.														
Aug. 19	53	Green Slate	Shevington	Redshaw and Marsh	George Redshaw	Foreman	39	Run over by waggons	–	–	–	–	1	1
„ „	54	Tawd Vale	Skelmersdale	Tawd Vale Colliery Co., Limited.	Jas. Holland	Collier	26	Fall of coal	–	1	–	–	–	1
„ 26	55	Crow Orchard	Do.	Crow Orchard Colliery Co., Limited.	Wm. Aspinall	Banksman	20	Fell down sinking shaft	–	–	1	–	–	1
„ „	56	Rose Bridge	Wigan	Rose Bridge & Douglass Bank Colliery Co., Limited.	Michael Cuttle	Collier	30	Fall of roof	–	1	–	–	–	1
Sept. 4	57	Strangeways Hall	Do.	Crompton and Shawcross	John Horrocks	Fireman	25	Fall of roof	–	1	–	–	–	1
„ 9	58	Elms	Do.	Dewhurst, Hoyle, & Smethurst.	Wm. Richardson	Collier	21	Fall of coal	–	1	–	–	–	1
„ 9	59	Park Lane	Do.	Garswood Coal & Iron Co., Limited.	Owen Thomas	Sinker	26	Stone fell from side of sinking pit	–	–	1	–	–	1
„ 21	60	Robin Hill	Do.	Wigan Coal & Iron Co., Limited.	John Rosbottom	Labourer	50	Crushed between waggon and screen support.	–	–	–	–	1	1
„ 24	61	Bradshaw	Hindley	Ditto	John R. Jackson	Drawer	13	Fall of roof	–	1	–	–	–	1
„ „	62	Ince Hall	Wigan	Ince Hall Coal & Cannel Co., Limited.	George T. Yates	Ditto	13	Fall of roof	–	1	–	–	–	1
Oct. 1	63	California	Do.	Wigan Coal & Iron Co., Limited.	Charles Gannon	Labourer	24	Crushed between waggons on the surface.	–	–	–	–	1	1
„ 7	64	Park Lane	Do.	Garswood Coal & Iron Co., Limited.	Henry Lowe	Drawer	16	Fall of roof	–	2	–	–	–	2
					Thos. Walsh	Collier	62	Fall of roof. Died 29th October						
„ 9	65	John Pit	Do.	Wigan Coal & Iron Co., Limited.	Michael Grey	Ditto	20	Fall of coal	–	1	–	–	–	1
„ 14	66	Sutton Heath	St. Helens	Jas. Radley	David Appleton	Ditto	44	Fall of roof	–	1	–	–	–	1
„ 20	67	Shevington	Shevington	J. Tayleure & Co.	John Bentham	Metalman	25	Fall of roof	–	1	–	–	–	1
Nov. 3	68	Pemberton	Wigan	Jon. Blundell & Sons	Robt. Layland	Mechanic	29	Crushed while unloading an engine	–	–	–	–	1	1
„ 4	69	Bradley Hall	Standish	B. & R. Fisher	Patrick Grady	Metalman	35	Explosion of gas	1	–	–	–	–	1
„ 9	70	Orrell	Wigan	Orrell Coal & Cannel Co., Limited.	Martin Roby	Collier	22	Crushed by tub whilst taking it down brow.	–	–	–	1	–	1
„ 15	71	Low Hall	Platt Bridge	Moss Hall Coal Co., Limited.	Jas. Mather	Ditto	22	Fall of coal	–	1	–	–	–	1
„ 17	72	Peasley Cross	St. Helens	Bourne and Robinson	Ed. Cartwright	Ditto	59	Crushed between loaded tubs at pit bottom.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1875.														
Nov. 18	73	Amberswood -	Wigan - -	Crompton & Shawcross -	Jas. Houghton -	Labourer -	66	Run over by loaded truck - -	–	–	–	–	1	1
„ 20	74	Moss Pits -	Do. - -	Pearson & Knowles Coal & Iron Co., Limited.	John Leonard -	Collier -	22	Fall of roof. (Injured 13th Oct.) -	–	1	–	–	–	1
„ „	75	Orrell - -	Do. - -	Orrell Coal & Cannel Co., Limited.	Ed. Hitchen -	Ditto -	20	Fall of roof - - -	–	1	–	–	–	1
„ 22	76	Shevington -	Shevington -	J. Tayleure & Co. -	Wm. Bullen -	Horse keeper	48	Found drowned in sump; supposed to have fallen out of cage.	–	–	1	–	–	1
„ 23	77	Collins Green -	St. Helens Jnc. -	Collins Green Colliery Co., Limited.	Matthew Hampson Jas. Macdonald -	Sinker - 45 Ditto - 27		Killed by bricks falling down the sinking pit.	–	–	2	–	–	2
„ „	78	St. Helens -	St. Helens -	Pilkington, Bros. -	John Laffy -	Labourer -	56	Crushed between waggons - -	–	–	–	–	1	1
„ 27	79	Moss Hall -	Wigan - -	Moss Hall Coal Co., Limited.	Robt. Green -	Brakesman	28	Crushed between waggons -	–	–	–	–	1	1
„ „	80	Rose Bridge -	Do. - -	Rose Bridge & Douglas Bank Colliery Co., Limited.	Patrick Dempsey -	Collier -	26	Fall of coal - - -	–	1	–	–	–	1
Dec. 2	81	Peasley Cross -	St. Helens -	Bourne & Robinson -	Thos. Roughley -	Dataler -	60	Run over by tubs on engine plane -	–	–	–	1	–	1
„ 4	82	Alexandra -	Wigan - -	Wigan Coal & Iron Co., Limited.	Thos. Beach - 34 Charles Holden - 26 Joseph Smith - 20 Josh. Fairclough - 19 Jas. Birchall - 26 Patrick Nolan - 25 Patrick Murthy - 22	Chargeman Metalman - Bricksetter - Ditto - Ditto - Labourer - Ditto -		Thrown from descending cage in consequence of the ascending cage coming in contact with it at "meetings" - - -	–	–	7	–	–	7
„ 10	83	Norley -	Do. - -	Norley Coal & Cannel Co.	John Waring -	Collier -	25	Fall of roof - - -	–	1	–	–	–	1
„ 11	84	Fir Tree House	Hindley - -	Crompton and Shawcross	John Higham -	Ditto -	24	Fall of roof - - -	–	1	–	–	–	1
„ 15	85	Crow Orchard -	Skelmersdale -	Crow Orchard Colliery Co., Limited.	John Darbyshire -	Ditto -	21	Fall of coal - - -	–	1	–	–	–	1
„ 14	86	Moss - -	Wigan - -	Pearson & Knowles Coal Co., Limited.	Michael McHugh -	Ditto -	20	Fall of roof - - -	–	1	–	–	–	1
„ 16	87	Carrs - -	Whiston - -	Carrs Colliery Co., Limited	Mark Burke -	Drawer -	15	Fall of coal from side of drawing road	–	1	–	–	–	1
„ „	88	Queen - -	Haydock -	Richd. Evans & Co. -	John Halliwell -	Collier -	25	Fall of roof - - -	–	1	–	–	–	1
„ 21	89	Douglas Bank -	Wigan - -	Rose Bridge & Douglas Bank Colliery Co., Limited.	Wm. Watkin -	Drawer -	12	Fall of roof - - -	–	1	–	–	–	1
„ 17	90	Meadows -	Do. -	Lamb & Moore - -	Ed. Riley - -	Labourer -	40	Run over by locomotive - -	–	–	–	–	1	1

LIST of the FATAL COLLIERY ACCIDENTS, and LOSS of LIFE arising therefrom, in the NORTH WALES DISTRICT, during the Year ending 31st December 1875.

Date.	No. of Accidents.	Name of the Colliery.	Where situate.	Owner's or Agent's Name.	Persons killed.	Occupation.	Age.	Cause of Death, and Remarks.	No. of Lives lost in Coal Mines.					
									Explosions.	Falls of Coal and Roof.	In Shafts.	Miscellaneous.	Above Ground.	Total.
1875.														
Jan. 7	1	Englefield	Holywell	Englefield Colliery Co., Limited.	Josh. Williams	Hooker on	56	Crushed by tubs. (Died 16th Jan.)	–	–	–	1	–	1
,, 22	2	Bersham	Wrexham	J. G. & W. Barnes	Edwin Evans	Dataler	22	Explosion of firedamp	1	–	–	–	–	1
,, 28	3	Brynkinalt	Chirk	Brynkinalt Colliery Co., Limited.	Josh. Stokes	Collier	42	Fall of coal	–	1	–	–	–	1
Feb. 15	4	Ewloc Hall	Buckley	Edward Parry	George Dodd	Ditto	33	Fall of roof	–	1	–	–	–	1
,, 22	5	Hope	Wrexham	Lilleshall Coal & Iron Co.	George Griffiths	Ditto	40	Fall of roof	–	1	–	–	–	1
,, 26	6	Brynmally	Do.	Thos. Clayton	Ed. Ellis	Hooker on	36	Getting out of cage while in motion	–	–	1	–	–	1
Mar. 5	7	Wynnstay	Ruabon	New British Iron Co.	John Valentine	Collier	19	Fall of coal	–	1	–	–	–	1
April 1	8	Plaskynaston	Do.	Plaskynaston Coal Co.	Thos. Morris	Ditto	31	Fall of coal	–	1	–	–	–	1
,, 16	9	Spon Green	Buckley	William Hancock	Josh. Astbury	Hooker on	17	Struck by piece of metal from side of pit.	–	–	1	–	–	1
,, 22	10	Plaskynaston	Ruabon	Plaskynaston Coal Co.	Thos. Williams	Taker off	17	Crushed by tubs	–	–	–	1	–	1
May 6	11	Hafod-y-bwch	Do.	Ruabon Coal Co., Limited	Wm. Dodd	Hooker on	17	Crushed by cage	–	–	1	–	–	1
June 3	12	Hafod-y-bwch	Do.	Ditto	Thos. Hesketh Wm. Jones John Roberts	Collier Ditto Overman	20 55 36	Explosion of firedamp	3	–	–	–	–	3
July 15	13	Sandycroft	Buckley	Sandycroft Colliery Co.	John Ellis	Labourer	31	Run over by waggon	–	–	–	–	1	1
Sept. 3	14	Gardden Lodge	Ruabon	Gardden Lodge Colliery Co., Limited.	David Jones	Carpenter	53	Fell from load of timber	–	–	–	–	1	1
,, 20	15	Gatewen	Wrexham	Broughton Coal Co.	David Williams	Sinker	63	Struck on the head by winch handle	–	–	–	–	1	1
Oct. 7	16	Vron	Wrexham	Vron Colliery Co., Limited	Ed. McDonald	Doggy	55	Fall of roof	–	1	–	–	–	1
,, 13	17	Hafod-y-bwch	Ruabon	Ruabon Coal Co., Limited	Ed. Roberts	Dataler	40	Crushed between full tub and roof	–	–	–	1	–	1
,, 19	18	Bryn-yr-owen	Do.	Coalbrookdale Iron Co.	John Morris	Drawer	18	Explosion of firedamp	1	–	–	–	–	1
,, 21	19	Broughton	Wrexham	Broughton Coal Co.	Price Jones	Collier	50	Fell from cage in shaft	–	–	1	–	–	1
,, 22	20	Brynkinalt	Chirk	Brynkinalt Colliery Co., Limited.	Samuel Jones	Drawer	18	Fall of coal	–	1	–	–	–	1
Dec. 2	21	Hanmer	Mostyn	Sir G. Elliott, Bart.	Edward Hughes	Collier	21	Fall of coal	–	1	–	–	–	1

LIST of MINES classed under the COAL MINES REGULATION ACT in MR. HALL'S DISTRICT, 1875.

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
		WEST LANCASHIRE.					
1	Ackers, Whitley, & Co., Limited, Hindley Green, Wigan.	Bickershaw	Hindley Green	1	2	1	4
2	Ditto	Plank Lane	Ditto	–	–	–	–
3	Baldwin, Ed., Orrell, Wigan	Orrell Post	Orrell	–	–	–	–
4	Banks, Meyrick, Wigan	Winstanley	Wigan	–	–	–	–
5	Barrow Hæmatite and Steel Co.	Dalton	Dalton, Wigan	–	–	–	–
6	Bates, G. A., Windle, St. Helens	City	St. Helens	–	–	–	–
7	Bird, Thos., & Co., Rainford, St. Helens.	Moss House	Rainford	–	–	–	–
8	Blackrod & Brynn Moss Coal and Cannel Co., Limited, Wigan.	Brynn Moss	Wigan	–	–	–	–
9	Blundell, Jonathan, & Sons, Pemberton, Wigan.	Pemberton	Ditto	1	1	3	5
10	Ditto	Venture	Ditto	1	–	–	1
11	Bourne & Robinson, St. Helens	Peasley Cross	St. Helens	2	1	2	5
12	Ditto	Sherdley	Ditto	–	1	–	1
13	Bramall, Henry, & Co., St. Helens.	Sankey Brook	Ditto	–	–	–	–
14	Ditto	Ashtons Green	Ditto	2	–	1	3
15	Brindle, William, Shevington, Wigan.	Shevington Moor	Wigan	–	–	–	–
16	Bromilow, David, & Co., St. Helens.	Garswood Park	St. Helens	1	–	–	1
17	Ditto	Laffak Garswood	Ditto	–	–	–	–
18	Ditto	Stanley	Ditto	–	–	–	–
19	Bromilow, Forster, & Co., Limited, Skelmersdale.	Bickerstaffe	Skelmersdale	1	–	–	1
20	Ditto	Moss	Ditto	–	–	–	–
21	Ditto	Lathom	Ditto	–	–	–	–
22	Cadman and Naylor, Billinge, Wigan.	Billinge Hill	Wigan	–	–	–	–
23	Collins Green Colliery Co., St. Helens.	Collins Green	St. Helens	–	–	2	2
24	Carrs Colliery Co., Ld., Prescot	Carrs	Prescot	–	–	2	2
25	Chapel House Colliery Co., Limited, Skelmersdale.	Chapel House	Skelmersdale	–	–	–	–
26	Ditto	Ditto	Ditto	–	–	–	–
27	Coop, Lea, & Marsden, Wigan	Pillitoft	Wigan	–	–	–	–
28	Crippin, William, Brynn, Wigan	Brynn Hall	Ditto	6	1	–	7
29	Ditto	Pemberton Pitts	Ditto	–	–	–	–
30	Crompton and Shawcross, Hindley, Wigan.	Ince Hall	Ditto	–	–	–	–
31	Ditto	Strangeways Hall	Ditto	1	2	2	5
32	Ditto	Amberswood	Ditto	–	–	1	1
33	Ditto	Fir Tree House	Ditto	–	1	1	2
34	Cross, John, St. Helens	Royal	St. Helens	–	–	1	1
35	Cross, John, & Co., Limited, Sutton, St. Helens.	Green Gate	Ditto	1	1	–	2
36	Cross, Tetley, & Co., Ashton, Wigan.	Riding Lane	Wigan	–	–	–	–
37	Ditto	Mains	Ditto	–	–	–	–
38	Ditto	Bamfurlong	Ditto	1	2	–	3
39	Ditto	Foggs Fold	Ditto	–	1	–	1
40	Crow Orchard Colliery Co., Limited, Shelmersdale.	Crow Orchard	Skelmersdale	–	1	2	3
41	Darbyshire, J.W., Gidlow Lane, Wigan.	Barley Brook	Wigan	–	–	–	–
42	Dewhurst and Berry, Skelmersdale.	Black Moss	Skelmersdale	–	–	–	–
43	Dewhurst, Hoyle, and Smethurst, Ashton, Wigan.	Garswood Hall	Ashton	1	3	–	4
44	Ditto	Elms	Wigan	–	–	2	2
45	Ditton Coal and Iron Co., Limited, Upholland, Wigan.	Ditton Brook	Upholland	–	1	–	1
46	Eckersly, N., Wigan	Worsley Mesnes	Wigan	–	1	–	1

List of Mines—*continued.*

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
47	Evans, Richard, & Co., Haydock, St. Helens.	Downal Green	Ashton	–	–	–	–
48	Ditto	Havannah	St. Helens	–	1	3	4
49	Ditto	Haydock	Haydock	3	1	–	4
50	Ditto	Leigh	Ditto	–	–	1	1
51	Ditto	New Boston	Ditto	–	1	2	3
52	Ditto	North	Ditto	–	–	–	–
53	Ditto	Pewfall	Ditto	1	2	–	3
54	Ditto	Queen	Ditto	–	1	2	3
55	Ditto	Wood	Ditto	–	1	–	1
56	Ditto	Edge Green	Golborne	3	1	1	5
57	Ditto	Hall House	St. Helens	–	–	–	–
58	Fairhurst and Co., Orrell, Wigan	Bold	Orrell	1	–	–	1
59	Fisher, B. and R., Standish, Wigan.	Bradley Hall	Standish	–	1	1	2
60	Galloway, James, Pemberton, Wigan.	Brook House	Wigan	–	–	–	–
61	Garswood Coal and Iron Co., Limited, Ashton, Wigan.	Park Lane	Ashton	–	3	8	11
62	Ditto	Upper Park Lane	Ditto	–	–	–	–
63	Gerrard, Lord, Ashton, Wigan	Garswood	Ditto	–	–	–	–
64	Gidlow, Thos., Hindley, Wigan	Gidlow	Wigan	–	–	–	–
65	Gillers Green Coal Co., Eccleston, St. Helens.	Gillers Green	St. Helens	–	–	2	2
66	Glover, Benjamin B., & Co., St. Helens.	Phœnix	Ditto	–	–	–	–
67	Haddock, James, St. Helens	Sutton	Ditto	–	–	–	–
68	Ditto	Burtonhead	Ditto	–	–	–	–
69	Hays and Johnson, Hindley Green, Wigan.	Abram	Hindley Green	–	1	–	1
70	Houghton, J., Skelmersdale	Berry Street	Skelmersdale	–	–	–	–
71	Howarth, Charles, Crank, St. Helens.	Rainford Delf	St. Helens	–	–	–	–
72	Hopton, Wm., St. Helens	Eccleston	Ditto	–	–	–	–
73	Ince Hall Coal and Cannel Co., Limited, Wigan.	Arley	Wigan	–	–	1	1
74	Ditto	Sawmill	Ditto	–	15	–	15
75	Ditto	Birket Bank	Ditto	–	–	–	–
76	Ditto	Britannia	Ditto	–	–	–	–
77	Ditto	East	Ditto	–	–	–	–
78	Ditto	Ince	Ditto	–	–	1	1
79	Ditto	Mesnes	Ditto	–	–	–	–
80	Ditto	Amberswood	Hindley	–	–	–	–
81	Johnson, Edward, Hindley Green, Wigan.	Swan Lane	Hindley Green	1	1	–	2
82	Ditto	Long Lane	Ditto	–	–	–	–
83	Johnson, John, Crank, St. Helens	Crank	St. Helens	–	–	–	–
84	Johnson, John, Orrell, Wigan	Irving House	Wigan	1	–	–	1
85	Laithwaite, John, Upholland, Wigan.	Lawns Delf	Upholland	–	–	–	–
86	Lathom and Quirk, Orrell, Wigan	Dean House	Wigan	–	–	–	–
87	Lamb and Moore, Wigan	Newtown	Ditto	1	–	–	1
88	Ditto	Meadows, No. 1	Ditto	–	2	2	4
89	Ditto	Meadows, No. 2	Ditto	–	–	–	–
90	Leigh, Roger, & Co., Hindley, Wigan.	Hindley Hall	Ditto	–	2	–	2
91	Lea, Thos., Huyton, Prescot	Huyton	Huyton	–	–	–	–
92	Lea & Sons, Whiston	Halsnead	Whiston	1	3	–	4
93	Marsh, William, Dalton, Wigan	Belvue	Dalton	–	–	–	–
94	Melling, Thos., Ashton, Wigan	Birchenheads	Ashton	–	–	–	–
95	Middlehurst, John, Windle, St. Helens.	Windle	St. Helens	–	–	–	–
96	Molyneux, George, & Co., Parr, St. Helens.	Redgate	Ditto	–	–	–	–
97	Moss Hall Coal Co., Limited, Ince, Wigan.	Moss Hall	Ince	–	–	1	1

List of Mines—*continued.*

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
98	Moss Hall Coal Co., Limited, Ince, Wigan.	Low Hall	Hindley	3	1	2	6
99	Ditto	Brookside	Ditto	–	–	–	–
100	Newburgh Mining Co., near Wigan.	Newburgh	Newburgh, Wigan	–	–	–	–
101	Norris and Lees, Hindley Green, Wigan.	Hindley Field	Hindley Green	–	–	–	–
102	Norley Coal and Cannel Co., Wigan.	Norley	Wigan	2	5	2	9
103	Ditto	Worthington	Standish	–	–	–	–
104	Orrell Coal and Cannel Co., Limited, Wigan.	Orrell	Wigan	2	3	2	7
105	Ditto	Ditto	Ditto	–	–	–	–
106	Ditto	Bold	St. Helens	–	–	2	2
107	Orrell Colliery and Firebrick Co., Limited, Orrell, Wigan.	Orrell Hall	Orrell	–	–	–	–
108	Parry, J., Aspull, Wigan	Kirkless Hall	Aspull	–	–	–	–
109	Pearson and Knowles Coal and Iron Co., Limited, Wigan.	Barley Brook	Wigan	–	–	–	–
110	Ditto	Hindley Hall	Hindley	–	–	–	–
111	Ditto	Ince Hall	Ince, Wigan	–	–	–	–
112	Ditto	Ince Moss	Ditto	3	–	5	8
113	Ditto	Trencherbone	Ditto	1	–	–	1
114	Pilkington Brothers, St. Helens	Deep Pits	St. Helens	1	–	2	3
115	Ditto	Alexandra	Ditto	1	–	–	1
116	Radley, James, St. Helens	Sutton Heath	Ditto	1	1	1	3
117	Ditto	Nutgrove	Ditto	–	–	1	1
118	Ditto	Thatto Heath	Ditto	–	–	–	–
119	Rainford Coal Co., Limited, Rainford.	Rainford	Rainford	1	–	–	1
120	Ravenhead Coal Co., Limited, St. Helens.	Ravenhead	St. Helens	2	1	1	4
121	Robinson, J., Huyton, Prescot	Tarbock	Huyton	–	–	–	–
122	Rogers, Wm., Wigan	Wrightington Toll Bar.	Wigan	–	–	–	–
123	Roper, Hamilton, and Lamb, Orrell, Wigan.	Orrell Mount	Orrell	–	–	–	–
124	Ditto	Ackhurst Hall	Gathurst	–	–	–	–
125	Rose Bridge and Douglas Bank Colliery Co., Limited, Wigan.	Rose Bridge	Wigan	1	–	3	4
126	Ditto	Douglas Bank	Ditto	2	1	2	5
127	Rylance, Thos., Pemberton, Wigan.	Beech Tree	Ditto	–	–	–	–
128	Rylands, Sons & Co., Limited, Wigan.	Gidlow and Swinley.	Ditto	–	–	3	3
129	Scowcroft, John, & Co., Limited, Hindley, Wigan.	Hindley Green	Hindley Green	2	1	–	3
130	Ditto	Grammar	Ditto	–	–	–	–
131	Ditto	Engine	Ditto	–	–	–	–
132	Skelmersdale, Lord, Skelmersdale	Blaguegate	Skelmersdale	1	1	1	3
133	Ditto	Park	Ditto	–	–	–	–
134	Stock, Samuel, Ashton, Wigan	Blackleyhurst	Ashton	1	1	–	2
135	Ditto	Leyland Green	Ditto	–	–	–	–
136	Ditto	Senela Green	Ditto	1	–	–	1
137	Stone, Thos., & Son, Ashton, Wigan.	Downal Green	Ditto	–	1	–	1
138	Tayleure, John, & Co., Shevington, Wigan.	Shevington	Shevington	1	–	3	4
139	Tawd Vale Coal Co., Limited, Skelmersdale.	Tawd Vale, No. 1	Skelmersdale	–	–	2	2
140	Ditto	Ditto, No. 2	Ditto	–	–	–	–
141	Ditto	Park	Ditto	–	–	–	–
142	Turner, W. and J., Wigan	Mesnes	Wigan	7	1	1	9
143	Twist, Wm., Parr, St. Helens	Union	St. Helens	–	–	–	–
144	Victoria Colliery Co., Limited, Rainford, St. Helens.	Victoria	Rainford	–	–	1	1

List of Mines—*continued.*

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
145	Wigan Coal and Iron Co., Ld., Wigan.	Aspull Pumping	Aspull	–	–	–	–
146	Ditto	Bradshaw	Ditto	–	1	1	2
147	Ditto	California	Ditto	1	1	3	5
148	Ditto	Crawford	Ditto	–	1	1	2
149	Ditto	Kirkless	Ditto	1	–	–	1
150	Ditto	Moor	Ditto	–	–	–	–
151	Ditto	Woodshaw	Ditto	–	–	–	–
152	Ditto	Bawkhouse	Haigh	–	–	–	–
153	Ditto	Bridge	Ditto	–	–	–	–
154	Ditto	Gorses	Ditto	–	–	–	–
155	Ditto	Lindsay	Ditto	–	1	3	4
156	Ditto	Meadow	Ditto	–	–	–	–
157	Ditto	Morris Lane	Ditto	–	–	–	–
158	Ditto	Alexandra	Ditto	–	–	8	8
159	Ditto	Tucker's Hill	Ditto	–	–	–	–
160	Ditto	Wash	Ditto	1	–	–	1
161	Ditto	William	Ditto	–	–	–	–
162	Ditto	Godfrey	Ditto	–	–	–	–
163	Ditto	Gullet	Ditto	–	–	–	–
164	Ditto	Deep	Hindley	2	–	1	3
165	Ditto	Ladies Lane	Ditto	–	1	1	2
166	Ditto	Penny Gate	Ditto	–	–	–	–
167	Ditto	Upholland	Upholland	–	1	–	1
168	Ditto	Prospect	Standish	–	–	1	1
169	Ditto	Swire	Ditto	–	1	–	1
170	Ditto	Gidlow	Ditto	2	–	–	2
171	Ditto	Broomfield	Ditto	–	–	–	–
172	Ditto	Langtree	Ditto	–	–	–	–
173	Ditto	Tunnel	Ditto	–	–	–	–
174	Ditto	Taylor	Ditto	–	–	–	–
175	Ditto	John	Ditto	–	–	1	1
176	Ditto	Giants Hall	Ditto	–	–	–	–
177	Ditto	Robin Hill	Ditto	1	–	1	2
178	Wigan and Whiston Coal Co., Limited, Wigan.	Platt Lane	Wigan	–	–	2	2
179	Ditto	Whiston	Whiston	–	–	2	2
180	Ditto	Prescot, No. 1	Ditto	–	2	–	2
181	Ditto	Ditto, No. 2	Ditto	–	–	–	–
182	Withers, J. H., Pimbo Lane	Fir Tree House	Pimbo Lane	–	–	–	–
183	Whaley and Lathom, Pemberton, Wigan.	Bell	Pemberton	–	–	–	–
184	Whitemoss Coal Co., Limited, Skelmersdale.	Whitemoss	Skelmersdale	1	3	–	4
185	Wood, J. and T., Hindley Green, Wigan.	Stonehouse	Hindley Green	–	–	1	1
186	Walmsley, W., Hindley Green, Wigan.	Grange Hall	Ditto	–	1	–	1
187	Withington Hill Colliery Co., Limited, Aspull, Wigan.	Withington Hill	Aspull	–	–	–	–

DENBIGHSHIRE.

1	Barnes, J. G. and W., Wrexham	Bersham	Wrexham	–	–	1	1
2	Bertram, Wm., jun., Chester	Wynn Hall	Ruabon	–	–	–	–
3	Bower, H. R., Ruabon	Penbeddw	Ditto	–	–	–	–
4	Broughton Coal Co., Wrexham	Broughton	Wrexham	–	1	1	2
5	Ditto	Gatewen	Ditto	–	–	1	1
6	Brynkinalt Colliery Co., Limited, Chirk.	Brynkinalt	Chirk	–	–	2	2
7	Buckley, Bradford, and Buckley, Ruabon.	Plaskynaston	Ruabon	5	2	2	9
8	Burton, R. O., Coedpoeth, Wrexham.	Coedpoeth	Coedpoeth	1	1	–	2
9	Charlwood, G. W., Wrexham	Ffrith	Wrexham	–	–	–	–
10	Clarke, Elias, and Co., Ponkey, Ruabon.	Furnace Bank	Ruabon	–	–	–	–
11	Clayton, Thomas, Wrexham	Bryn Mally	Wrexham	1	–	1	2
12	Ditto	Pendwllt	Ditto	–	1	–	1
13	Ditto	Gwersyllt	Ditto	2	–	–	2
14	Coalbrookdale Co., Ruabon	Bryn-yr-owen	Ruabon	1	1	1	3

List of Mines—*continued.*

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
15	Darby, W. H., Brymbo, Wrexham.	Brymbo	Wrexham	2	–	–	2
16	Ditto	Penrhos	Ditto	1	–	–	1
17	Ditto	Smelt	Ditto	–	–	–	–
18	Dennis, Hy., Ruabon	Legacy	Ruabon	–	–	–	–
19	Edwards, J. C., Ruabon	Traffynant	Ditto	–	–	–	–
20	Evans, Joseph, Rhos, Ruabon	Plasbennion	Ditto	–	–	–	–
21	Gardden Lodge Colliery Co., Limited, Ruabon.	Gardden Lodge	Ditto	–	–	1	1
22	Glascold Colliery Co., Limited, Brymbo, Wrexham.	Glascoed	Wrexham	–	–	–	–
23	Griffiths, John, & Co., Ponkey, Ruabon.	Ponkey	Ruabon	–	–	–	–
24	Griffiths, Wm., & Co., Ponkey, Ruabon.	Gutter Hill	Ditto	–	–	–	–
25	Grosvenor Colliery Co., Limited, Wrexham.	Grosvenor	Wrexham	–	–	–	–
26	Hughes, Evan, Acrefair, Ruabon	Sycamore	Ruabon	–	–	–	–
27	Hussey-Jones, W. C., Rhos, Ruabon.	Llwynenion	Ditto	–	–	–	–
28	Higgins, William, 19, King Street, Wrexham.	Cae-pen-ty	Wrexham	–	–	–	–
29	Jackson, John, Acrefair, Ruabon	Cambrian	Ruabon	–	–	–	–
30	Ditto	Croes Street	Ditto	–	–	–	–
31	Jarvis, Ed., Ponkey, Ruabon	Plas-yn-delf	Ditto	–	–	–	–
32	Jarvis, J., & Co., Rhos, Ruabon	Pentre-dwr	Ditto	–	–	–	–
33	Javal, E. C., & Co., 9A, New Broad Street, London, E.C.	Afoneitha	Ditto	1	–	–	1
34	Ditto	Christioneth	Ditto	–	–	–	–
35	Jones, Merrick, Ponkey, Ruabon	Square	Ditto	–	–	–	–
36	Kenrick and Sons, Ruabon	Wynn Hall	Ditto	–	–	–	–
37	Llay Hall Coal, Iron, and Coke Co., Limited, Wrexham.	Llay Hall	Wrexham	–	–	–	–
38	Lloyd, Jenkyn, & Co., Ruabon	Bryn-y-felin	Ruabon	–	–	–	–
39	Marland and Davies, Wrexham	Pen-y-coed	Wrexham	–	–	–	–
40	New British Iron Co., Ruabon	Wynnstay	Ruabon	8	–	1	9
41	Ditto	Acrefair	Ditto	–	–	–	–
42	Pant Coal, Brick, & Fireclay Co., Limited, Rhos, Ruabon.	Erwlwydd	Ditto	–	–	–	–
43	Plas Power Coal Co., Wrexham	Plas Power	Wrexham	–	–	–	–
44	Roberts, Gomar, Ruabon	Pant Hill	Ruabon	–	–	–	–
45	Ditto	Brandy	Ditto	–	–	–	–
46	Robinson, J. G., and Co., Ruabon	Llanerchrugog	Ditto	–	–	–	–
47	Ruabon Coal Co., Limited, Ruabon.	Hafod-y-bwch	Ditto	9	4	5	18
48	Seacome, T. H., Ruabon	Delf	Ditto	–	–	–	–
49	Smith, George, Ruabon	Plas Ucha	Ditto	–	–	–	–
50	Sparrow and Poole, Wrexham	Ffrwd	Wrexham	1	–	–	1
51	Stott-Milne, John, and Co., Chirk	Black Park	Chirk	2	–	–	2
52	Thomas, Wm., Ponkey, Ruabon	Bankddu	Ruabon	–	–	–	–
53	Travis, John, Rhos, Ruabon	Mount Street	Ditto	–	–	–	–
54	Vauxhall Colliery Co., Ruabon	Vauxhall	Ditto	2	–	–	2
55	Vron Colliery Co., Limited, Wrexham.	Vron	Wrexham	2	3	1	6
56	Westminster Brymbo Coal and Coke Co., Limited, Wrexham.	Westminster	Ditto	1	1	–	2
57	Ditto	Nant	Ditto	–	–	–	–
58	Williams, J. J., Holywell	Coed-y-felin	Ditto	–	–	–	–

List of Mines—*continued.*

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
59	Williams, John, Copperas, Ruabon.	Plassissaf	Ruabon	–	–	–	–
60	Williams, Rich., Acrefair, Ruabon	Pen-y-bryn	Ditto	–	–	–	–
61	Wrexham and Acton Colliery Co., Limited, Wrexham.	Wrexham	Wrexham	–	2	–	2
62	Ditto	Acton	Ditto	–	–	–	–
		FLINTSHIRE.					
1	Allcarn & Anstie, Coed Talon, Mold.	Hazlewood	Coed Talon	–	–	–	–
2	Aston Hall Coal Co., Limited, Hawarden, Chester.	Aston Hall	Hawarden	–	–	–	–
3	Ditto	Pentrobin	Buckley	–	–	–	–
4	Barnes, Major, Dalkeith Villa, Stratford, Essex.	Crossfield	Ditto	–	–	–	–
5	Bedford Pits Colliery Co., Limited, Mold.	Bedford	Mold	–	–	–	–
6	Bettisfield Colliery Co., Limited, Bagillt.	Bettisfield	Bagillt	–	–	–	–
7	Bronwhlfa Colliery Co., Limited, Mold.	Bronwhlfa	Mold	1	1	–	2
8	Castle Hill Coal and Firebrick Co., Northop, Flint.	Plas Bellin	Northop	–	–	–	–
9	Catherall, Wm., Buckley, Chester	Alltami	Buckley	–	–	–	–
10	Coal Consumers Association, Limited, Mold.	Mold Town	Mold	–	–	–	–
11	Coed Talon Colliery Co., Limited, Coed Talon, Mold.	Coed Talon	Coed Talon	–	–	–	–
12	Ditto	Cefn-y-coed	Ditto	–	–	–	–
13	Ditto	No. 3 Pit	Ditto	–	–	–	–
14	Ditto	Cae Blydden	Ditto	–	–	–	–
15	Ditto	Main Coal	Ditto	–	–	–	–
16	Coleshill Colliery Co., Limited, Flint.	Coleshill	Flint	–	–	–	–
17	Coppa Colliery Co., Limited, Padeswood, Mold.	Coppa	Padeswood	–	–	–	–
18	Dublin Main Coal Co., Limited, Northop, Flint.	Dublin Main	Northop	1	–	–	1
19	Eleanor Colliery Co., Limited, Queen's Ferry.	Eleanor	Queen's Ferry	2	1	–	3
20	Elliott, Sir George, Bart., Holywell.	Hanmer	Holywell	2	–	1	3
21	Englefield Colliery Co., Limited, Holywell.	Englefield	Ditto	–	–	1	1
22	Flint Marsh Colliery Co., Limited, Flint.	Flint Marsh	Flint	1	–	–	1
23	Flintshire Oil & Cannel Co., Limited, Tryddyn, Mold.	Tryddyn Farm	Tryddyn	–	–	–	–
24	Ditto	Tryddyn Lodge	Ditto	–	–	–	–
25	Forrest, Jacob, Mold	Oak Pits	Mold	2	1	–	3
26	Hancock, Wm., Buckley, Chester	Spon Green	Buckley	–	–	1	1
27	Ditto	Lexham Green	Ditto	–	–	–	–
28	Hull, Henry, Mold	Mynydissaf	Mold	–	–	–	–
29	Industrial Partnership Colliery Co., Limited, Mold.	Upper Argoed	Ditto	–	–	–	–
30	Jones, David, exors. of, Bagillt	Wern	Bagillt	–	–	–	–
31	Leeswood Cannel & Gas Coal Co., Limited, Leeswood, Mold.	Leeswood Green	Leeswood	1	–	–	1
32	Ditto	Bryn-y-celyn	Ditto	–	–	–	–
33	Lilleshall Coal and Iron Co., Limited, Shropshire.	Hope	Wrexham	–	–	1	1

List of Mines—*continued.*

No. of Colliery.	Owner or Company, and Postal Address.	Name of Mine or Colliery.	Where situate.	Deaths since January 1873.			
				1873.	1874.	1875.	Total.
34	Little Mountain Coal, Iron, and Clay Co., Limited, Buckley.	Little Mountain	Buckley	1	2	–	3
35	Lynch, J. J., Mold	Rhyd-y-galed	Mold	–	–	–	–
36	Michell, T. H., & Co., Padeswood, Mold.	Coed-llai	Padeswood	–	–	–	–
37	Mold Argoed Colliery Co., Limited, Mold.	Mold Argoed	Mold	1	1	–	2
38	Mostyn Coal & Iron Co., Limited, Mostyn.	Mostyn Quay	Mostyn	–	2	–	2
39	Ditto	Eyton	Ditto	–	–	–	–
40	Nerquis Coal and Cannel Co., Mold.	Nerquis	Mold	1	–	–	1
41	Ditto	Hendre	Ditto	–	–	–	–
42	New Leeswood Main Coal Co., Limited, Leeswood, Mold.	Leeswood Main	Leeswood	–	–	–	–
43	Newton, Josh., Hawarden, Chester.	Cheapside	Hawarden	–	–	–	–
44	North Buckley Coal Co., Limited, Buckley, Chester.	West Buckley	Buckley	–	–	–	–
45	Nowell & Harris, Padeswood, Mold.	Leeswood Hill	Padeswood	–	–	–	–
46	Padeswood United Coal & Cannel Co., Limited, Padeswood, Mold.	Nant Mawr	Ditto	–	–	–	–
47	Parry, Edwd., Buckley, Chester	Ewloe Hall	Buckley	–	1	1	2
48	Pontblydden Colliery Co., Padeswood, Mold.	Pontblydden	Padeswood	–	–	–	–
49	Prior, John, Buckley, Chester	Alltami	Buckley	–	–	–	–
50	Russell, A., 49, Finsbury Square, London.	Galchog	Northop, Flint	–	–	–	–
51	Sandycroft Colliery Co., Buckley, Chester.	Sandycroft	Buckley	–	–	1	1
52	South Buckley Coal and Firebrick Co., Limited, Buckley, Chester.	South Buckley	Ditto	–	–	–	–
53	Thompson, F., Queen's Ferry	Queen's Ferry	Queen's Ferry	–	2	–	2
54	Ditto	Aston New	Ditto	–	–	–	–
55	Watkinson, George, and Sons, Limited, Buckley, Chester.	Willow	Buckley	–	–	–	–
56	Ditto	Oak	Ditto	–	–	–	–
57	Ditto	Elm	Ditto	–	–	–	–
58	Ditto	Maes-y-greg	Ditto	–	–	–	–
59	West Mostyn Colliery Co., Limited, Mostyn.	West Mostyn	Mostyn	–	–	–	–
60	Whitefield Colliery Co., Limited, 163, Fenchurch Street, London.	Broadway	Mold	–	–	–	–
61	Wright, Joseph, Mancot, Hawarden.	Mancot	Hawarden	–	–	–	–
		ANGLESEY.					
1	Griffiths, Richard, Bangor St., Carnarvon.	Pont Marquis	Bodorgan	–	–	–	–
2	Parry, Hy., Gaerwen, Anglesey	Nant	Gaerwen	–	–	–	–
3	Roberts, M. K., Gaerwen, Anglesey.	Ninevah	Ditto	–	1	–	1

OFFICIAL FORMS and NOTICES under the COAL MINES REGULATION ACT, 1872, namely, 1st of January Return; 1st of February Return; Register of Boys, Young Persons, Girls, &c.; School Certificate; Notices relating to District Board for appointing Examiners, and to Examinations for Certificates of Competency; Notice relating to Applicants for Certificates of Service.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. Cap. 76. Sect. 69. and Schedule 4

Annual Return from Owner or Agent.

This Form to be filled up and sent to the Inspector of the District on Jan. 1, 1874 and every following year.

Name of Colliery_____ Pit_____ Name of Seam_____.

Year ending the___day of_____187___.

Average Number of Persons employed daily.		Mode of Ventilation.	Furnace or Fan, with Description.	Diameter and Depth of downcast and upcast Shafts.				Number of Splits and Quantity.		Average Length of Airways.	Sectional Area of Airways.	Average Total Quantity of fresh Air in cubic feet per minute.
				Downcast.		Upcast.						
Above Ground.	Under Ground.			Diameter in feet.	Depth in feet.	Diameter in feet.	Depth in feet.	Splits.	Quantity in cubic feet per minute.			

Name of the Owner or Company_____ Where situated_____

This Form to be filled up and sent to the Inspector of the District on or before 1st February every year.

COAL MINES REGULATION ACT, 35 & 36 Vict. c. 76. s. 38.

Name of the Mine or Colliery_____

Situation of Mine _____

County_____

Name of Owner (Company)_____

RETURN of PERSONS ordinarily employed during the Year ending 31 December 187 .

Under ground - -	Boys of 10 and under 12 - - - - - -		
	Boys of 12 and under 13 - - - - - -		
	Male young persons of 13 and under 16 - - - -		
	Males above 16 - - - - - -		
	Total under ground - - - -		
Above ground - -	Boys of 10 and under 13 - - - - - -		
	Girls do. - - - - - -		
	Male young persons of 13 and under 16 - - - -		
	Female do. do. - - - -		
	Women above 16 - - - - - -		
	Males do. - - - - - -		
	Total above ground - - - -		
	Total number of persons employed in the mine both under ground and above ground -		

Quantity of Mineral wrought during the Year ending 31 December 187 .

Mineral wrought.	No. of Tons wrought.
Coal - - - - - -	,,
Fireclay - - - - - -	,,
Ironstone - - - - - -	,,
Oil Shale - - - - - -	,,
Alum Shale - - - - -	,,
Copperas Stone - - - - -	,,

day of 187 .

(*Signed*)_____

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

REGISTER.

_____ *Mine.* _____ *Manager.*

Boys of the age of 10 and under the age of 12 employed below ground.

From day of 18 to day of 18

NOTE.—The dates printed in the column headed "Memorandum of Certificates of School Attendance" are the dates of the successive Saturdays in the year 1873.

Upon a FORTNIGHTLY Certificate being received certifying that during the fortnight ending on any one of the printed dates the school attendance of a boy has been such as to satisfy the provisions of the Act, a mark thus —— is to be placed in the space allotted to such date.

Also if during any such fortnight a boy has been employed, but for some cause sanctioned by the Act has not attended school, the cause should be inserted in the space, as "Sick," "School closed," or "No school," as the case may be.

Name.	Age.	Residence.	Date of first Employment.	Memorandum of Certificates of School Attendance.												Remarks.
				Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	
				4 11 18 25	1 8 15 22	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27	

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

_____ *Mine.* _____ *Manager.*

Boys of the age of 12 and under the age of 13 employed below ground.

From day of 18 to day of 18

Name.	Age.	Residence.	Date of first Employment.	Remarks.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

_____ *Mine.* _____ *Manager.*

Male young persons of the age of 13 and under the age of 16 employed below ground.

From day of 18 to day of 18 .

Name.	Age.	Residence.	Date of first Employment.	Remarks.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 67. s. 13.

_____ *Mine.* _____ *Manager.*

Boys of the age of 10 and under the age of 13 employed above ground.

From day of 18 to day of 18 .

NOTE.—The dates printed in the column headed "Memorandum of Certificates of School Attendance" are the dates of the successive Saturdays in the year 1873.

Upon a FORTNIGHTLY Certificate being received certifying that during the fortnight ending on any one of the printed dates the school attendance of a boy has been such as to satisfy the provisions of the Act, a mark thus —— is to be placed in the space allotted to such date.

Also if during any such fortnight a boy has been employed, but for some cause sanctioned by the Act, has not attended school, the cause should be inserted in the space, as "Sick," "School closed," or "No school," as the case may be.

Name.	Age.	Residence.	Date of first Employment.	Memorandum of Certificates of School Attendance.												Remarks.
				Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	
				4 11 18 25	1 8 15 22	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27	

NOTE.—The dates printed in the column headed "Memorandum of Certificates of School Attendance" are the dates of the successive Saturdays in the year 1873.

Upon a FORTNIGHTLY Certificate being received certifying that during the fortnight ending on any one of the printed dates the school attendance of a girl has been such as to satisfy the provisions of the Act, a mark thus —— is to be placed in the space allotted to such date.

Also if during any such fortnight a girl has been employed, but for some cause sanctioned by the Act has not attended school, the cause should be inserted in the space, as "Sick," "School closed," or "No school," as the case may be.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

_____ *Mine.* _____ *Manager.*

Girls of the age of 10 and under the age of 13 employed above ground.

From day of 18 to day of 18 .

Name.	Age.	Residence.	Date of first Employment.	Memorandum of Certificates of School Attendance.												Remarks.
				Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	
				4 11 18 25	1 8 15 22	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27	

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COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

_____ *Mine.* _____ *Manager.*

Male young persons of the age of 13 and under the age of 16 employed above ground.

From day of 18 to day of 18 .

Name.	Age.	Residence.	Date of first Employment.	Remarks.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

_____ *Mine.* _____ *Manager.*

Female young persons of the age of 13 and under the age of 16 employed above ground.

From day of 18 to day of 18 .

Name.	Age.	Residence.	Date of first Employment.	Remarks.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76. s. 13.

_____ *Mine.* _____ *Manager.*

Women above the age of 16 employed above ground.

From day of 18 to day of 18 .

Name.	Age.	Residence.	Date of first Employment.	Remarks.

COAL MINES REGULATION ACT, 1872, 35 & 36 Vict. c. 76.

SCHOOL CERTIFICATE.

Weekly Certificate.—I hereby certify that the under-mentioned child employed in the mine of _____ _____ situated in _____ has attended the school kept by me at _____ for the number of hours and at the time on each day specified in the columns opposite to his name, during the week ending on Saturday night, the _____ day of _____ one thousand eight hundred and seventy_____, and that the causes of absence stated are true, to the best of my belief.

Name of Child.	Monday. *Time.		Tuesday. *Time.		Wednesday. *Time.		Thursday. *Time.		Friday. *Time.		Saturday. *Time.		Causes of Absence.
	From	To	From	To	From	To	From	To	From	To	From	To	

* When the Schooling begins or ends at a half-hour, the half-hour will be most conveniently inserted in Figures thus—$8\frac{1}{2}$—$11\frac{1}{2}$, or $1\frac{1}{2}$—$4\frac{1}{2}$, in Time Columns.

(Signed) _____ Schoolmaster, the _____ day of _____ 187 .

Fortightly Certificate.—Also I hereby certify that the attendance of the above-mentioned child at the said school during the fortnight ending on the Saturday night above mentioned, has been such as to satisfy all the provisions of the 8th section of the said Act as abstracted on the back of this Certificate.

(Signed) _____

Every child who by the Coal Mines Regulation Act, 1872, is not allowed to be employed in or about a mine except on condition of attending school during such employment, must, in order to satisfy the provisions of the 8th section of that Act, attend school for at least 20 hours in every fortnight during which he is employed.

Attendance is not to count if—

(*a.*) In excess of three hours at any one time, or five hours in any one day, or of twelve hours in any one week.

(*b.*) On Sundays.

(*c.*) Before 8 a.m. or after 6 p.m.

The non-attendance of any child at School may be excused—

(*a.*) For any time during which the child is certified by the principal teacher of the school to have been prevented from attendance by sickness or other unavoidable cause.

(*b.*) For any time during which the school is closed for the customary holidays, or for some other temporary cause.

NOTICES AS TO CERTIFICATES OF COMPETENCY.

Notice relating to District Boards for appointing Examiners for Managers Certificates of Competency.

Whereas in pursuance of the above-mentioned Act, the Secretary of State for the Home Department has determined that a board for appointing examiners for managers' Certificates of Competency shall be constituted for each district in charge of an inspector of mines, and has accordingly appointed as members of the board of each district—

(*a.*) Three persons being owners of mines to which the above-mentioned Act applies in the district;

(*b.*) Three persons employed in or about a mine to which the said Act applies in the district, not being owners, agents, or managers of a mine; and

(*c.*) Three persons practising as mining engineers, agents, or managers, or coal viewers in the district.

Notice is hereby given, that the under-mentioned persons have been appointed to act as secretaries to the several boards of examination, for the purpose of the grant of managers' Certificates of Competency under the above Act.

In the examinations regard is had to such knowledge as is necessary for the practical working of mines in the different districts of the United Kingdom.

Applicants desirous of being examined should, therefore, apply for all necessary information to the secretary of that district in which they desire to serve as managers. Persons who do not reside within the district are equally eligible for examination with those who do.

Mining District and Name of the Inspector.	Name and Address of the Secretary to the Board of Examiners.	Month in which Examinations will be held.
Northumberland, Cumberland, and North Durham. (James Willis, Esq.)	George Southern, Esq., Philipson's Buildings, Newcastle-on-Tyne.	January.
South Durham, Westmoreland, and Cleveland. (Thomas Bell, Esq.)	G. W. Bartlett, Esq., Cleveland Parade, Darlington.	July.
North and East Lancashire and Ireland. (Joseph Dickinson, Esq.)	M. W. Peace, Esq., 19, King Street, Wigan.	December.
West Lancashine—the Wigan and St. Helen's Districts, and North Wales. (Henry Hall, Esq.)	M. W. Peace, Esq., 19, King Street, Wigan.	June.
Yorkshire and Lincolnshire. (Frank N. Wardell, Esq.)	John R. Jeffery, Esq., Solicitor, Bradford, Yorkshire.	June.
Derby, Notts, Warwick, and Leicester. (Thomas Evans, Esq.)	Wm. Saunders, Esq., 42, Full Street, Derby.	October.
North Staffordshire, Shropshire, and Cheshire. (Thomas Wynne, Esq.)	Joseph Knight, Esq., Newcastle-under-Lyne, Staffordshire.	June.
South Staffordshire and Worcestershire. (James P. Baker, Esq.)	W. Blakemore, Esq., Heath Town, Wolverhampton.	January.
Monmouth, Gloucester, Somerset, and Devon. (Lionel Brough, Esq.)	J. T. Thomas, Esq., Winnay's Hill, Coleford.	July.
South Wales. (Thomas Wales, Esq.)	C. H. James, Esq., 8, Courtland Terrace, Merthyr Tydfil.	January.
Scotland—Eastern Division. (Ralph Moore, Esq.)	Robert Calder, Esq., 296, Renfrew Street, Glasgow.	May.
Scotland—Western Division. (W. Alexander, Esq.)	C. Macpherson, Esq., 116, St. Vincent Street, Glasgow.	November.

Certificates of Competency.

The fee of an applicant for examination for a certificate of Competency as a manager of a mine is 2*l.*

Any person desirous of being examined must make an application to the Secretary of State in the form hereunder set forth, enclosing therein a post office order for the fee of 2*l.* in favour of F. S. Leslie, Esq., Chief Clerk, Home Office, made payable at the Charing Cross Post Office. The applicant will then receive from the Home Office an authority to present himself for examination before the examiners appointed for the district.

Form of Application for Examination.

Date_____

(*Full postal address*)_____

Sir,

I beg to inform you that I am desirous of presenting myself to be examined by the examiners for the district of for a Certificate of Competency as manager of a mine, and I enclose a post office order for the sum of 2*l.*

I am,
Sir,
Your obedient servant,

To the Right Hon.
the Secretary of State for the Home Department.

Notices.—Certificates of Service.

Notice relating to Applicants for Certificates of Service.

Any person who satisfies the Secretary of State either that before the passing of this Act (10th August 1872) he was acting, and has since that day acted, or that he has at any time within five years before the passing of this Act, for a period of not less than twelve months, acted in the capacity of a manager of a mine, or such part of a mine as can under this Act be made a separate mine for the purposes of this Act, is entitled to a Certificate of Service, which shall have the same effect for the purposes of this Act as a Certificate of Competency granted under this Act.

The fee to be paid by an applicant for a Certificate of service is five shillings.

Any person who is entitled to obtain a Certificate of Service as manager of a mine, and who has not yet obtained it, should *forthwith* make to the Secretary of State an application, accompanied by a statement in manner hereunder set forth, and enclosing a post office order for the fee of five shillings in favour of F. S. Leslie, Esq., Chief Clerk, Home Office, made payable at Charing Cross Post Office.

Form of Application for a Certificate of Service.

SIR,

I BEG to apply for a Certificate of Service as manager of a mine, and enclose a post office order for the sum of five shillings, and a statement containing information upon the required particulars.

I am, Sir,
Your obedient Servant,

To
The Right Hon. the Secretary of State
for the Home Department.

1. Name and address of Applicant for Certificate of Service.	1.
2. Full postal address of applicant.	2.
3. The name of the mine in which (if any) the applicant is acting.	3.
4. The name of the district of the Inspector in which (if in any) the applicant is acting.	4.
5. Place of birth of applicant.	5.
6. Time of birth of applicant.	6.
7. Length and nature of previous service of applicant.	7.
8. Name and address of any person to whom reference may, if necessary, be made for verification of these particulars.	8.

day of

(Signed)_____

CERTIFICATES OF COMPETENCY.

The Board of Examinations for certificates of competency as Colliery managers consists of the following gentlemen, viz., Messrs. Hewlett, Pilkington, and Robertson, representing the colliery proprietors; Messrs. Bryham, Gilroy, and Watkin, representing the mining engineers; and Messrs Howard, Kennedy, and Ryley, representing the working men.

The three gentlemen appointed by the Board as examiners are Messrs. Greenwell, Jackson, and Griffiths.

Examinations under the Coal Mines Regulation Act will be held as follows:—

Northumberland.	January.
Durham.	July.
North Lancashine and Ireland.	December.
West Lancashire and Wales.	June.
Yorkshire.	September.
North Staffordshire.	June.
South Staffordshire.	January.
Derby.	October.
South Wales.	January.
South West.	July.
East Scotland.	April.
West Scotland.	October.

Dr. C. Le Neve Foster's Report.

REPORT on the INSPECTION of METALLIFEROUS MINES in CORNWALL, DEVONSHIRE, DORSETSHIRE, and part of SOMERSETSHIRE, for the year ended 31st December 1875.—By CLEMENT LE NEVE FOSTER, Esq., B.A., D.Sc., F.G.S.

SIR, Truro, 25th March 1876.

I HAVE the honour to present you my Report on the working of the Metalliferous Mines Regulation Acts in my district during the year 1875.

The Act passed last year to amend the provisions of the Metalliferous Mines Regulation Act, 1872, with respect to the date on which the annual returns have to be sent in, has worked exceedingly well. I have not heard any complaints from the owners or agents of mines about their being obliged to furnish me with the returns on or before the 1st of February, and they made no difficulty about complying with the new Act.

I now, therefore, have to lay before you two sets of statistics, those relating to 1874, received on or before 1st August 1875, as well as those for 1875.

The number of persons employed in my district during the years 1874 and 1875, was as follows:

	Cornwall.		Devonshire.		Dorsetshire.		Part of Somersetshire.		Totals.	
	1874.	1875.	1874.	1875.	1874.	1875.	1874.	1875.	1874.	1875.
Underground:—										
Boys of 12 to 13	57	44	8	2	—	—	2	1	67	47
Males of 13 to 16	1,058	850	116	103	4	4	9	8	1,187	965
Males above 16	10,473	9,440	1,344	1,256	39	48	206	212	12,062	10,956
Total underground	11,588	10,334	1,468	1,361	43	52	217	221	13,316	11,968
Above ground:—										
Boys of 8 to 13	884	725	94	101	2	1	1	2	981	829
Girls of 8 to 13	301	249	30	33	—	—	—	—	331	282
Males of 13 to 18	1,897	1,662	245	233	8	9	11	12	2,161	1,916
Females of 13 to 18	1,091	967	82	109	—	—	—	—	1,173	1,076
Females above 18	1,833	1,653	101	98	—	—	—	—	1,934	1,751
Males above 18	4,523	3,934	781	675	31	19	61	70	5,396	4,698
Total above ground	10,529	9,190	1,333	1,249	41	29	73	84	11,976	10,552
Total number employed	22,117	19,524	2,801	2,610	84	81	290	305	25,292	22,520

The following table gives a summary of the mining produce for 1874 and 1875.

Kind of Mineral.	Cornwall.		Devonshire.		Dorsetshire.		Part of Somersetshire.		Totals.	
	1874.	1875.	1874.	1875.	1874.	1875.	1874.	1875.	1874.	1875.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Arsenic (crude and refined).	2,133*	2,286†	2,086*	1,497†	—	—	—	—	4,219	3,783
Arsenical pyrites	—‡	6,721	—‡	6,227	—	—	—	—	—‡	12,948
Building stone	—	—	101	—	—	—	—	—	101	—

* Crude arsenic. † Chiefly refined arsenic.

‡ Arsenical pyrites included with the iron pyrites.

Summary of the mining produce for 1874 and 1875—*continued.*

Kind of Mineral.	Cornwall.		Devonshire.		Dorsetshire.		Part of Somersetshire.		Totals.	
	1874.	1875.	1874.	1875.	1874.	1875.	1874.	1875.	1874.	1875.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Copper ore	37,980	39,037	12,770	14,492	—	—	—	—	50,750	53,529
Copper precipitate	—	41	—	—	—	—	—	—	—	41
Fluor spar	—	—	609	324	—	—	—	—	609	324
Iron ore	37,649	9,034	17,587	9,994	—	—	41,317	41,927	96,553	60,955
Iron pyrites	2,119*	315	710*	109	—	—	—	—	2,829*	424
Lead ore	3,109	2,553	501	330	—	—	—	—	3,610	2,883
Manganese ore	25	16	5,391	3,709	—	—	—	—	5,416	3,725
Ochre and Umber	207	6	515	920	—	—	—	—	722	926
Pipe-clay and potter's clay	—	—	23,546	26,107	24,226	20,579	—	—	47,772	46,686
Silver ore	3⅓	—	—	—	—	—	—	—	3⅓	—
Silver precipitate containing copper.	1⅓	1½	—	—	—	—	—	—	1⅓	1½
Tamping stone	120	180	—	—	—	—	—	—	120	180
Tin ore dressed (*Black tin*).	12,464	11,695	130	120	—	—	—	—	12,594	11,815
Tin ore undressed (*Tin-stuff*).	20,896†	25,205‡	—	—	—	—	—	—	20,896†	25,205‡
Tungstate of soda	22	—	—	—	—	—	—	—	22	—
Wolfram	33	45	—	—	—	—	—	—	33	45
Zinc ore	693	2,988	—	—	—	—	—	—	693	2,988

* Arsenical pyrites included with the iron pyrites. † Estimated to contain 568 tons of black tin.
‡ Estimated to contain 796 tons of black tin.

It must be remarked that the tons given in the 1874 column are those ordinarily used in buying and selling the ores in question; in fact, as I stated in last year's Report, they vary from 20 to 22½ cwts. By the new Act of 1875 perfect uniformity has been introduced and all quantities are stated in statute weight. This difference in the weights used must be taken into account in comparing the quantities produced in 1875 with those of previous years, in fact in the case of the copper ore of Cornwall an apparent increase in the production is really a decrease.

Owing to the increased consumption of white arsenic a considerable demand has sprung up for the ore from which it is produced, and I have thought it right to state the quantity of arsenical pyrites separately, instead of including it with the iron pyrites as in former years.

As in previous Reports I must observe that the figures given above do not express the total mineral produce of my district, but merely that which is obtained from true underground workings.

Though I gave, in last year's Report, the number of fatal accidents that occurred in 1874, I was unable, from not having received the returns, to calculate the ratios of the accidents and deaths to the number of persons employed. I can now state these ratios exactly both for 1874 and 1875.

In the year 1874 there were 44 fatal accidents and 51 deaths, or one fatal accident for every 574 persons employed and one death for every 496 persons employed.

In 1875 there were 44 fatal accidents and 46 deaths, or one fatal accident for every 511 persons and one death for every 489 persons employed.

These figures are slightly less favourable than those which I gave for 1873.

The fatal accidents that happened in 1875 may be classified as follows, and for the sake of comparison I append the corresponding figures for the two previous years.

	Number of separate Accidents.			Number of Deaths resulting therefrom.		
	Year			Year		
	1873.	1874.	1875.	1873.	1874.	1875.
Falls of ground	10	12	7	10	16	7
In Shafts.						
Overwinding	—	—	—	—	—	—
Ropes or chains breaking	2	—	—	2	—	—
Whilst ascending or descending by machinery	3	1	—	3	2	—
Falling into shaft from surface	—	1	—	—	1	—
Things falling from surface	—	—	1	—	—	1
Falling from part way down	11	11	10	11	11	10
Things falling from part way down	4	2	4	4	2	4
Miscellaneous in shafts	—	4	1	—	4	1
Totals in shafts	20	19	16	20	20	16
Miscellaneous Underground.						
Explosions of gunpowder, &c.	5	3	4	5	4	4
Suffocation by gases	1	—	1	1	—	1
Irruptions of water	—	—	1	—	—	3
Falling into water	—	—	—	—	—	—
On inclined planes	—	—	—	—	—	—
By trams and tubs	—	—	—	—	—	—
By machinery underground	1	2	—	1	2	—
Sundries underground	8	2	7	8	2	7
Total miscellaneous	15	7	13	15	8	15
On Surface.						
By machinery on surface	8	3	4	8	3	4
Boilers bursting	3	1	—	4	1	—
Miscellaneous on surface	3	2	4	3	3	4
Total on surface	14	6	8	15	7	8
Gross total	59	44	44	60	51	46

Appended to my Report is the usual schedule of fatal accidents with a short explanation of each. It will not, therefore, be necessary for me to refer especially to all the cases, I shall only make a few comments on some of the important accidents or classes of accidents.

Falls of Ground.

It is with much pleasure that I am able to note the fact that accidents of this class only form 15 per cent. of the deaths against 31 in the previous year. There is nothing calling for any special remarks, save that three of the seven accidents were caused by premature falls of rocks which the miners were in the act of dislodging, whilst the remaining four falls were entirely unexpected.

"Sounding" the ground in the working places is a most important test in order to ascer ain whether it is secure or not; and it must be recollected that this test should be repeated, for rocks which were originally pretty firmly sealed to the rest of the ground may, after a time, become loosened, from air and water penetrating into the joints surrounding them and destroying the bond of connection.

In Shafts.

It is very evident from inspecting the statistics given above that the metal miners of the south-west of England are exposed to more dangers in shafts than in any other parts of the mines, for, speaking roughly, about one third of the deaths occur in shafts.

Things falling from surface.

The only accident from this cause was due to carelessness on the part of a young man in removing a plank from the top of a shaft. It slipped from his hands as he was raising it, fell down the shaft, and unfortunately struck the timberman who was at work there.

Falling from part way down.

This class of accidents is rather numerous, but as the precise cause of each was different, it is difficult to make any general remarks applying to the whole group.

Accident No. 22, though strictly included in the list, is not a true mine accident in the ordinary sense of the term. The deceased, during the dinner hour, climbed a little way down a shaft with two companions for fun; unluckily he missed his footing and fell five fathoms, receiving fatal injuries. The boy wilfully went into danger, and his death was no more due to perils incident to his calling than would be that of a plough-boy who fell down from a tree while robbing a bird's nest.

Accident No. 37 was caused by gross stupidity on the part of the deceased, a trammer at Restormel Mine, where tram waggons are raised by cages from the 10-fathoms level to the adit. The deceased pushed an empty tram waggon into the wrong compartment, viz., the one where the cage was down, and fell down the shaft with it. Only two or three minutes beforehand he had drawn away a full waggon from the cage in the other compartment, so there was no excuse for making the mistake. Self-acting gates, like those used in many other places, have now been put up to fence the shaft, instead of the shifting bars previously provided.

It is rarely that I have met with a case illustrating more fully the utter recklessness of some miners than Accident No. 44. The deceased, a trammer at the 130-fathoms level in East Pool Mine, did not like the idea of climbing to the surface after his day's work, so he tried to jump on to the skip in quick motion as it passed the *plat* where he was standing. He was unlucky enough to fail in catching hold properly and fell 50 fathoms.

Things falling from part way down.

In the case of accident No. 6, I have stated the verdict of the coroner's jury. A miner and his son were ascending a shaft by ladders; the son, who was carrying a pick in one hand, fell off a ladder on to his father who was standing at the foot of it. Though complaining of being a good deal hurt, the father managed to climb more than a hundred fathoms to the surface, and walked from the mine to his home, a distance of several miles. He did not call in medical assistance at once, and was able to leave his bed and walk about a little after he had been at home a few days; however, he got worse and died a week after the accident.

Unfortunately, the surgeon, who had attended the deceased both before and after the accident, was not summoned to give evidence at the inquest. I saw him afterwards, and he informed me that the man really died of "acute bronchitis supervening on chronic bronchitis "from which with emphysema he had been suffering for many months." He also said: "The shock of the injury may have made him susceptible to contract fresh cold, but there "was no injury to any part which had a direct effect in causing death."

Under these circumstances, I have had considerable doubt about including the death in my list of accidents. However, after the verdict of the jury, who formed their decision from the evidence adduced at the inquest, I do not think I should be justified in omitting this case; but at the same time I cannot help regretting that a certificate from the surgeon was not laid before the jury, as it might have altered their verdict.

Accident No. 38 might also be included under the title *Falling from part way down*, but I have placed it under the heading which best describes its cause. A trammer at East Pool Mine wanting to get a rail repaired in a hurry, put it into the skip and jumped on with his comrade to "ride" up. Unfortunately, a stone happened to fall down the shaft, struck one of the two men and knocked him off the skip; he fell 30 fathoms and was of course killed. Rule 11, Sec. 23, was passed to prevent accidents of this kind. On visiting the mine in 1873 I called the manager's attention to it, and he provided a *shield* or cover, which was put on while the men were being raised or lowered. Had the shield been used this accident would no doubt have been avoided. In the present instance, however, the man was going up before relief time, when men were not supposed to be "riding." I, therefore, considered that I could not prosecute the agent for this particular case, though I am bound to add that the evidence at the inquest proved that there had been some laxity in carrying out the rule generally. A regular cage has now been provided, which is used for raising the men at stated times, and no one is allowed to use the skip.

Accident No. 40. Two miners were going underground at West Wheal Frances, and had only climbed down two ladders, when a borer, carried by one of them, fell out of the sling, and its cutting edge or "bit" struck the other on the head. In spite of a severe cut the man went down and worked out his "core" or shift. On going to the doctor in the evening he was told that his skull was fractured, and, although he received constant medical attendance,

he died ten days after the accident. It was the deceased himself who had fastened the borer in the sling.

This is an accident which illustrates the danger of miners carrying tools when ascending or descending ladders, a practice which should be prohibited in every mine as far as possible. There is not only the danger of a falling pick or borer striking some one underneath, but the hindrance caused by carrying tools may make a man miss his hold; and, consequently, it is not right that men and boys should be weighted while climbing ladders, especially when ascending a deep mine after a hard day's work. Even the little kegs of drinking water are an impediment, and I am convinced that much comfort and increased safety for the men would be gained if all tools and water kegs were raised and lowered by machinery wherever it is reasonably practicable.

Miscellaneous in Shafts.

If rules are made for the protection of men, agents must be strict in seeing that they are duly enforced, for the best of rules are of course worthless if allowed to become a dead letter. Until stricter obdience is exacted accidents such as No. 2, for instance, will occur from time to time.

A boy named Daniel O'Brian and two comrades jumped into the skip at the surface, in order to be lowered down one of the shafts of West Wheal Frances, to save themselves the trouble of climbing. The lander cautioned them, told them they were disobeying the rules, and that they were liable to a fine of 10*s*. each. The lads would not leave the skip, and the lander at last lowered them to the 130-fathoms level. Unknown to him, the water had risen considerably, and the boys suddenly found themselves in water six or seven feet deep, their lights were extinguished and O'Brian, who could not swim, was drowned.

Of course the lander acted very wrongly in allowing the boys to descend in the skip, but though there was this fine of 10*s*. it did not appear, from the evidence given at the inquest, that it had been inflicted, at all events during the preceding 12 months, though the offence had been committed several times. Cases of this kind seem to demand "Special Rules," for then men and boys might be made liable to severe punishment for neglect to observe the rules, and agents would run the risk of prosecution if they did not enforce them.

Miscellaneous Underground.

Explosions of Gunpowder, &c.

The four fatal accidents all happened during the tamping, which is the most dangerous part of the operation of blasting. One accident occurred while the *first* "laying" of tamping was being driven with an iron bar into a hole charged with powder. This practice is so dangerous that it is prohibited by law. In two of the other three cases copper tamping bars were being used and the explosions happened while the second and third layings of tamping respectively were being introduced. In the fourth fatal blasting accident the powder exploded while an iron bar was being used to ram in the second laying of tamping. In all four cases I may add the powder was loose and not enclosed in any bag or cartridge. I will return to this subject while speaking of the non-fatal accidents.

It is satisfactory to note that not a single fatal accident occurred while dynamite was being used, although large quantities of this strong explosive are employed in my district. This immunity from accident is due to the fact that no hard tamping is required when blasting with dynamite, a loose covering of sand, clay, or water being sufficient.

Suffocation by Gases.

This cause, which is an uncommon one, brought about a very serious accident at Great Wheal Lovell, which is a small mine about 50 fathoms deep. It was ventilated naturally by two shafts, but there was very little difference of level between their mouths. The consequence was that, unless there was a considerable difference between the temperature of the externa. air and that of the air in the mine, the ventilation became exceedingly sluggish. During the latter half of August the air in the mine had been getting worse and worse, and the men had complained to the agent. He endeavoured to improve the ventilation by opening certain old winzes and closing the entrance to one of the levels. However, these remedies were without effect, so on Monday afternoon 30th August a lot of furze was burnt in one of the levels

by the agent's orders and ¼ cwt. of gunpowder exploded at 6 p.m. in another level. About 10 p.m. the agent saw the men who worked in the sump winze and told them to wait a bit before going down. On arriving at the mine again at 6 a.m. the agent found that the men were not up and at once sent others below. The three shaftmen were found lying quite unconscious in the bottom of the lowest or 44-fathoms level, and on account of the badness of the air there was much difficulty in rescuing them. Two of the three recovered, whilst the third, a delicate man, died on the day after the accident. It appears that on arriving at the sump winze, between 1 and 2 a.m., they soon felt the poisonous effects of the deadly atmosphere they were breathing and resolved to go up at once. Though they were only about 40 fathoms away from the shaft they were unable to reach it, and fell down unconscious and lay in that condition for about five hours before they were found.

After the men had been rescued, active measures were at last taken to improve the ventilation; the upcast shaft was heightened by a wooden chimney, a water blast set to work and doors put up in two of the levels; by these means the greater part of the foul air was quickly removed. However, when I went underground a few days after the accident, I found by chemical tests that the quantity of carbonic acid gas was still considerable though a candle would burn upright.

There is no doubt about the cause of the accident. Thermometric observations soon proved that the external and internal temperatures were about the same, and consequently there was nothing to effect a natural ventilation. The evidence given at the inquest confirmed this. A witness who had worked four years at Great Wheal Lovell stated: "I have known the air foul before *at this time of year*. In *winter* we have a good draught." As there was no draught the air naturally became worse and worse every day, from the carbonic acid gas produced by respiration of the men, the combustion of candles, and the explosion of powder in blasting, whilst at the same time the amount of oxygen was diminished. No wonder, therefore, if after the lapse of two or three weeks, the air in the mine became utterly unfit for breathing and barely capable of supporting human life. It was stated by a witness at the inquest that a candle would not burn upright for the whole fortnight preceding the accident. Such a state of things was abominable and no men ought to have been allowed to work in such an atmosphere.

Though used with the very best intentions, two of the remedies applied by the agent, viz.: burning the furze and exploding the powder, aggravated the evil by increasing the amount of carbonic acid gas. Of course fire may be employed for ventilating purposes, but care must be taken that all the products of combustion are made to find their way out of the mine. This was not done in the present instance.

A case of this kind was so palpably an infringement of General Rule 1, Sec. 23, that, acting under your instructions, I summoned the agent for not having provided sufficient ventilation. He was fined 10*l.* and costs.

Irruptions of Water.

For the first time since my appointment I have to record an accident of this kind, and I regret that it proved fatal to three persons, being the worst accident during the year.

A cross-cut was being driven south along a cross-course from No. 2 lode at the 25-fathoms level, in the St. Aubyn United Mines, in order to intersect No. 1 lode, on which the level had been driven, within a few fathoms to the west. It was calculated that No. 1 lode would be reached after driving four fathoms, and it was known that about five fathoms further south was the Wheal Grambler Middle lode, where there were some old workings full of water.

This barrier of five fathoms was considered sufficient, especially as another cross-cut had been carried several fathoms through the barrier further west without meeting with any water. However, when only 16 feet had been driven along the cross-course, water burst in from the back of the cross-cut, and pouring down the engine shaft rapidly filled the lower workings. The rush of air and the noise warned the men of the danger, and most of them managed to escape by climbing up through the old workings, but one man and two boys were overtaken by the water and drowned.

A long investigation was held before a competent jury, and the result was that the manager was acquitted of all blame. It was proved that the water did come from the old workings; but it is supposed that it found its way under pressure along the cross-course through many fathoms of ground, and gradually worked a passage large enough to let in a considerable quantity at once. This is the only explanation that can be given at present, for the cross-cut where the water broke in has not yet been cleared out. Under these circumstances I have thought it unnecessary to give a plan of the workings.

Sundries Underground.

Accident No. 1 requires some comment. Some men were set to work at Park of Mines to stope some tin ground under other workings. They worked up so near that one of the legs supporting timber in the upper stopes fell through into the lower ones. The fall of the leg brought about the fall of some stones and timber in the upper stopes, and one poor fellow was crushed to death. In speaking of this accident I can use no other word but "bungling." The agents, of course, knew perfectly well that the other stopes were above, and by a few simple measurements it would have been easy to ascertain how far the men could work in safety. Though a verdict of "accidental death" was returned, the coroner told the agent that the jury considered that he had been guilty of decided neglect.

In the case of No. 13, a man and his son were going to their work in Carn Brea Mine, when they found they had missed their way. Hearing from the noise of the machinery that they were near the engine shaft, they tried to make their way to it instead of retracing their steps; but in crossing some old workings a plank on to which the father was stepping slipped, and he was precipitated into the workings below, receiving fatal injuries. The place where the accident occurred was not a regular travelling road, and had not been used for many years.

The other miscellaneous accidents underground, are, I think, sufficiently explained in the schedule at the end of my Report.

On Surface.

By Machinery on Surface.

Accident No. 18, which happened at West Chiverton Mine, requires some explanation, as statements were made at the time that the boy had been put to work in a dangerous place. The boy was ordered to shovel up stuff coming from a revolving sieve driven by bevel-gearing, which was throughly protected by two boards; the work itself was attended by no risk whatever. Of his own accord, the boy took down the fence, and, in spite of warnings, would not replace it. For some reason he went near the unfenced gearing, although his work did not necessitate his so doing, was caught between the two bevel-wheels, and received fatal injuries. I could not find any fault with the agents of the mine.

The boy killed by accident No. 36 brought about his own death by meddling with machinery where he had no business at all. He left his own work, it appears, and set a pulverizer to work; finding he could not throw it out of gear, he ran to the water-wheel that worked it, and as it did not stop immediately after he had turned off the water, he jumped into it as it was going slowly, hoping to arrest it by his weight, and was crushed to death.

Accident No. 41 of the schedule happened at a stamps engine-house. The engineman went to oil some bearings at a place where no one but himself ever went. To save himself trouble he did not stop the engine, and, by chance, his sleeve was caught. The unfortunate man was drawn in by the gearing, and so much injured that he died a few days afterwards.

Miscellaneous on Surface.

Accident No. 11 at Wheal Owles was caused by disregard to repeated orders. A boy asked the trammers to let him ride on some waggons as they were ascending an inclined plane worked by machinery. They told him that he must not get on as it was against the rules; the boy was determined to ride, however, ran on ahead and climbed on to the top of a hedge, from whence he attempted to jump on to a waggon. Unluckily he fell between two waggons and was run over.

Accident No. 15 proves how small a fall will sometimes prove fatal.

I may here mention four deaths which were reported to me, but which are not included in my list, as they were not true mine accidents.

Lavinia Hellings, a child 10 years old, employed at some so-called stream-works near Camborne, fell into the Red River and was drowned. These stream-works are dressing floors, where the refuse of mines washed down the river is treated once more, in order to extract a little tin ore; but as they are not directly connected with any underground workings they do not come under the Act.

John Trethewey, a miner, aged 52, was found dead underground at East Wheal Grenville under circumstances that left no doubt about the death being from natural causes.

Thomas Carlyon, a lander, aged 34, fell from a tramway at South Carn Brea Mine, and died. The surgeon examined at the inquest, who had been attending the deceased before his death for asthma and heart disease, deposed that the man died from the rupture of a blood-vessel in the lung caused by a violent effort of coughing, and that the fall had nothing to do with his death.

James Pascoe, a school-boy, aged 10 years, was drowned in an old abandoned shaft. Of this case I will say a few words later on when speaking of open shafts generally.

NON-FATAL ACCIDENTS.

The number of non-fatal accidents causing serious personal injury, or arising from explosions of powder, &c., reported to me during the year, amounts to 85 against 52 in 1874. I do not infer from this that accidents were more rife in 1875 than in the previous year, but I think the agents are beginning to know the Act better, and to understand more fully that they must give me due notice when a serious accident has taken place.

The non-fatal accidents may be classified as follows :—

	Separate Non-fatal Accidents.	Persons injured.
Falls of ground	15	17
In Shafts.		
Overwinding	—	—
Ropes and chains breaking	1	1
Whilst ascending or descending by machinery	2	2
Falling into shaft from surface	—	—
Things falling from surface	—	—
Falling from part way down	13	14
Things falling from part way down	3	3
Miscellaneous in shafts	1	1
Total in shafts	20	21
Miscellaneous Underground.		
Explosions of gunpowder, &c.	20	21
Suffocation by gases	—	—
Irruptions of water	—	—
Falling into water	—	—
On inclined planes	—	—
By trams and tubs	—	—
By machinery underground	1	1
Sundries underground	17	18
Total miscellaneous	38	40
On Surface.		
By machinery on surface	2	2
Boilers bursting	—	—
Miscellaneous on surface	10	10
Total on surface	12	12
Gross total	85	90

It is satisfactory to notice, though mechanical means are not as a rule made use of for raising and lowering men in my district, that the man-engines employed in several of the mines work on the whole very safely; in all cases it is the single-rod man-engine that is used. No fatal accident occurred with them, and only two serious man-engine accidents were reported to me. It is, therefore, a matter of regret that this useful contrivance is not more commonly adopted, especially as it can be applied to vertical or inclined shafts, or even those that have a varying underlie. In the whole of my district there are only nine man-engines,

and as will be seen by the accompanying table, the miners have often a long way to climb by ladders between the bottom of the man-engine shaft, and the bottom of the mine.

Name of Mine.	Depth of Adit Level.	Depth of Man-engine Shaft below the Adit Level.	Total depth of the Mine below the Adit Level.
	Fathoms.	Fathoms.	Fathoms.
Carn Brea	28	170	250
Cook's Kitchen	26	160	320
Crenver and Wheal Abraham	26	200	254
Devon Great Consols, Wheal Josiah	60	110	210
Devon Great Consols, Wheal Emma	25	180	180
Dolcoath	28	248	326
Levant	30	170	278
South Caradon	12	140	230
Tincroft	25	142	246

I must remark that the depths stated above are somewhat in excess of the actual perpendicular depths, as they are all partly reckoned along the underlie of the lodes. The total number of persons using these man-engines daily is about 2,000.

In order to make a fair comparison between the various methods of ascending and descending mines with regard to their relative safety, it would be necessary to take averages extending over a longer period than the three years during which my statistics have been collected; besides which there are very few mines in my district where skips or cages are used by the men. I may state, however, that as far as my experience goes at present, the man-engine appears to be safer than ladders. In Germany, where the double-rod man-engine is generally used, the result is different. I have found some carefully prepared statistics on this subject in the "Zeitschrift für das Berg- Hütten- und Salinen-Wesen in dem Preussischen Staate," and I think they are worthy of being recorded here. Taking the six years 1869 to 1874, both inclusive, there was on an average, out of 134,968 persons employed underground annually in the districts of Halle, Breslau, Bonn, Dortmund and Clausthal, 1 death yearly among every 7,658 miners ascending and descending by ladders; 1 death yearly among every 2,319 miners using man-engines, and finally, 1 death yearly among every 4,235 miners raised and lowered by cages. The compiler remarks that though climbing ladders appear to be the safest method of ascending and descending shafts, it must be borne in mind that this means is much used in shallow mines, with, consequently, less probability of an accident occurring.

Both in the non-fatal as well as the fatal accidents, those classed under the heading *falling from part way down* are generally numerous. Though grouped together they comprise accidents happening in very various ways, falling from ladders or plats, giving way of "sollars," planks slipping, &c.

The difference between the numbers of blasting accidents in 1875 and previous years is so great, that I scarcely think it can be explained by the supposition that the agents are more strict than before in sending me notices. I consider it, therefore, highly necessary that I should enter into a few particulars of the 20 non-fatal blasting accidents which caused injuries to 21 persons.

The modes in which these 20 accidents occurred may be classified as follows:—

	Number of Accidents.
While tamping the second or third "laying"	4
While picking or boring out holes that had missed fire	5
While charging powder with iron chargers	2
Unexpected explosions on going back to holes which it was supposed had missed fire	3
While claying out holes for the purpose of blasting with powder, after charges of dynamite that had missed fire had been removed	2
While forcing down a stone with steel borer in a hole partly charged with dynamite	1
While warming dynamite in a can over a candle	1
Effect of a blast in a "rise" breaking through into a "winze" which was being sunk to communicate with it	1
Powder in can took fire from a spark caused by cutting the fuse with a hammer	1
Total number of accidents	20

Of the four accidents that occurred during tamping three took place with copper tamping bars, and one with an iron bar.

Before discussing the possible modes in which these accidents may have happened, I must premise that in my district the blasting powder is generally employed loose, and the charge is invariably fired by means of the safety fuse. Two theories have been proposed to account for accidents during the tamping. The first is that the powder takes fire from a spark, and the second, that it is ignited by the heat evolved from the sudden compression of the air contained between its grains, or between it and the first laying of tamping.

The formation of the spark is easily conceived, either from an iron tamping bar striking fire against a hard siliccous rock, or even with a copper bar from the friction of particles of quartz against pyrites either in the sides of the hole or in the tamping itself. The question is, how does the spark communicate with the charge after one "laying" or layer of tamping has been introduced? It has been supposed by some that the fuse is cut by the tamping bar, and at the same time ignited by a spark, and at first sight this explanation seems very plausible. If it were correct, however, there would be no reason why the explosion should happen at a certain period of the tamping, as I find they nearly always do. From careful observations during the last three years, I have learned that the explosions almost invariably happen while the first, second, or third laying of tamping is being rammed in, and not afterwards. All the mine agents with whom I have spoken on the subject are unanimous on this point. We are therefore led to the conclusion that the sparks do not ignite the powder through a severed safety fuse, and we must seek some other means by which fire may be communicated through two or three layings of tamping. In my opinion the fire is conveyed by a train of loose powder lying either in a cavity (*vugh*) or fissure, or else at the sides of the fuse. Experienced miners, after introducing the charge and before commencing to tamp, are careful to brush down the hole with a wet swab-stick in order to remove any loose grains of powder; but if this precaution is omitted, or even if the swabbing is done carelessly, by simply inserting the swab-stick above the fuse and not sweeping away powder under it, dangerous little trains may be left.

An effectual plan of preventing these accidents would be to prohibit the use of loose powder altogether, and compel the men to put it into paper bags as is done on some parts of the Continent. I fear, however, that it would be well nigh impossible to cause this practice to be introduced in my district.

I must now say a few words about the second or "compression of air" theory, for the fact that five out of the eight fatal and non-fatal accidents during tamping occurred with copper or copper-tipped bars seems to give some foundation for it. There is one circumstance that forms an equally strong, if not stronger, argument against it. If charges were ignited by heat caused by compression of air, accidents would be equally common in all kinds of rock; but as far as my experience goes, they happen more frequently in rocks containing particles of quartz than in those which do not emit sparks when struck with iron, such as limestone or rock salt, and I scarcely think that this fact is explained by saying that the latter rocks do not require such hard tamping as the former. I made inquiries not long ago at Delabole Slate Quarry, where 300 or 400 persons are employed and a large amount of blasting carried on every day, and I was informed by one of the oldest quarrymen, that to his knowledge there had never been a single accident during tamping, though loose powder and iron bars are employed. I think it would be difficult to find a Cornish mine where an equal amount of blasting had been done without any accident in tamping, and consequently I am led to suppose that this immunity from accident is due to the comparative softness of the rock.

Picking the tamping and explosive out of holes that have missed fire is of course an infringement of Clause *e*, General Rule 2, Sec. 23, and the men are liable not only to a fine, but also to imprisonment for an offence of this kind, as it is one that endangers the safety of persons employed. Up to the present time there have been no prosecutions by owners or agents for offences of this kind; the fact is, the broken limbs and injured eye-sight, so commonly the penalty of picking out holes, have been a greater punishment than any the law could inflict. Should, however, any case come to my knowledge of a hole being picked out with little or no injury to the offender, I should at once inform the agent that I should consider he was not doing all in his power to enforce the general rules unless he prosecuted.

Though the law prevents the miner from using an iron tamping bar directly on an explosive, men are perfectly at liberty to introduce the loose powder into the hole in an iron charger. A slight spark caused by friction against quartz or some other hard substance will of course cause the powder to ignite. Accidents whilst charging are naturally, as a rule, less severe than those which take place during the operation of tamping, as the powder is not confined.

Nevertheless, I should certainly prefer to see the use of copper chargers made compulsory wherever the powder is used loose.

Accidents from supposed miss-fires, of which three occurred last year, are greatly guarded against by a rule adopted in some mines, which, in case of a hole not going off, forbids the men returning to their working place during the same "core" or shift.

As dynamite does not require any hard tamping, and will even do its work without any, it is usual if a charge misses fire simply to insert a new primer with cap and fuse, and this expedient often fires the unexploded cartridge at the bottom of the hole. It is very dangerous, however, to use iron or steel in a hole that may have dynamite sticking in the sides or bottom. A fatal accident that happened in 1873 in this manner, and three non-fatal accidents last year, should be a warning to all miners.

The three last accidents from explosives in my list were simply due to sheer carelessness on the part of the men.

The other non-fatal accidents underground, like those that occurred at the surface, do not call for any special remarks.

I have not included in my list of non-fatal accidents one that happened to a little boy near Old Tincroft Consols, as he was not employed in or about the mine. An adit was being repaired, and the men were much inconvenienced by boys from a neighbouring school who would persist in playing about the shafts, and hindering them by mischievous pranks. The men did all they could to drive the boys away, and while on the spot prevented any accident. During their absence the boys went to play with a windlass and kibble at a shaft where the men had been at work, and one of the boys fell down it and was seriously injured. No doubt the men might have made the place more secure when they left work; but I believe it is almost impossible to prevent boys from wilfully running into danger, especially when it is within easy reach.

Boilers bursting.

It is with great pleasure that I am able to report that only one boiler explosion occurred in my district last year, and that this was perfectly harmless as far as personal injuries were concerned.

The engineer at East Wheal Grenville, knowing that I am anxious to see every boiler that explodes in my district, kindly reported the case to me, and I was able to examine the boiler externally and internally soon after the explosion, which happened on the 9th December.

The boiler was of the usual Cornish type, with a single flue 30 ft. 6 in. long, shell 6 ft. in diameter, flue 3 ft. 6 in., original thickness of the plates of the shell $\frac{7}{16}$ in., of the flue $\frac{3}{8}$ in. The boiler was provided with a lever safety-valve, steam pressure-gauge and glass water-gauge. Working pressure 35 lbs. The kind of explosion was that known as a collapse of the tube or flue. On examining the boiler internally I found that the plates of the flue were extensively corroded and in many places only $\frac{1}{4}$ in. thick, or even less; some of the rivet heads on the back of the flue were very much eaten away and the inside of the shell was also much corroded about the water line.

A better example of a collapsed tube could hardly be found, as every ring, save the last three, was either bent, broken, or doubled in completely.

The force of the explosion was considerable, as it sufficed to blow out both ends of the boiler-house.

I was informed that the boiler had been at East Wheal Grenville 16 or 17 years and that it was not new when taken there, in fact that it was probably 25 years old. It had already exploded once before in the same way.

This explosion affords another example of what is insisted upon by so many engineers out of Cornwall and a few in that county, viz.: that the large long flues of Cornish boilers are not safe unless properly strengthened. I have no hesitation in saying that the cause of the East Wheal Grenville explosion was weakness, arising from original mal-construction and wear and tear.

A tube 30 ft. 6 in. long, 3 ft. 6 in. in diameter and made of $\frac{3}{8}$-in. plate would collapse when perfectly new and circular at a pressure of about 88 lbs.; it was, to say the least, disgraceful foolhardiness to go on working this old boiler with its corroded plates at a pressure of 35 lbs., and had any fatal accident occurred from the explosion, I think the owner or agent might have been found guilty of criminal negligence.

A comparison of the numbers of boiler explosions and deaths resulting therefrom for the last three years is eminently gratifying. In 1873 there were nine boiler explosions and four deaths, in 1874 two boiler explosions and one death, and last year one explosion and no death

or even personal injury. I must confess, however, that knowing the number of unstrengthened tubes that are made use of in my district, I am not sanguine enough to expect that things will necessarily go on in such a satisfactory manner. I feel sure, on the contrary, that explosions will continue to occur as long as Cornish engineers and agents are unconvinced of the weakness of unstrengthened tubes.

Unfenced abandoned shafts.

In spite of nearly three years work and numerous prosecutions, I regret to state that there must still be many unprotected abandoned shafts in my district, for I am constantly receiving letters from farmers and others informing me of cases that require attention. A great deal of my time has been taken up by attending to these matters, for having heard of legal proceedings taken by me in many instances, the public almost invariably turn to me when a dangerous open shaft has to be fenced, instead of going to the Local Sanitary Authority of the district. I must admit that, as a rule, the persons liable comply with my notices, but my list of prosecutions shows that I still meet with some who are refractory.

I have already alluded to the death by drowning of James Pascoe, a boy of 10 years old. The deceased with several of his schoolfellows went to play on Carnmenellis Common. It is a piece of inclosed waste land, traversed by several footpaths; these it is stated are all trespass paths, the public having no right of way across the common. While playing, the hat of one of the boys was blown off, fell into an old disused shaft, and floated on the top of the water, which was about six feet below the level of the surface. Pascoe climbed down and tried to get the hat, but failed, he then climbed down a second time in spite of the warnings of his playmates. Unfortunately, the stone on which he was standing slipped away under his feet and he fell in. Pascoe's companions were too small and too much frightened to be able to save him, and the poor lad was drowned before their eyes.

A verdict of "accidental death" was returned at the inquest, because the boy went wilfully into danger in spite of warnings.

I examined the place before the inquest and again afterwards, and came to the conclusion that there had not been any breach of the Metalliferous Mines Regulation Act, as the shaft had been abandoned long before the passing of the Act, was in inclosed land and more than 50 yards from a regular footpath.

This was the only accident to human life from unfenced abandoned shafts, but I have heard of various cases of farmers losing horses or cattle. It is strange that more accidents have not happened, for many of the shafts that I have caused to be fenced were very near roads or footpaths with children and grown up persons constantly passing close to them.

Prosecutions.

I had hoped that the fines inflicted for open shafts in 1874 would have acted as a sufficient warning, but as I was unable to get attention paid to my notices, I obtained your sanction to institute legal proceedings for several breaches of Section 13.

The Revd. St. Aubyn H. Molesworth St. Aubyn was fined 10*s.* and costs for not having fenced some old abandoned shafts on his property near Leedstown.

The Boscaswell Downs Mines Association, Limited, was fined 5*l.* and costs for not having fenced some abandoned shafts, and a dangerous open pit in the parish of St. Just.

Mr. J. G. Barton, lessee of the Roscrow United Mines, was fined 5*l.* and costs for having neglected to fence some open shafts near Ponsanooth.

In all three cases notice in writing had been given to the offender, and I had waited at least several weeks or months, to see whether the work would be done, before taking out the summonses.

With your approval legal proceedings were taken by me in four other cases, and the defendants were all convicted.

The Balmynheer Tin Mining Company, Limited, was fined 10*s.* and costs for neglecting to keep a proper register, to post the abstract of the Act, to give notice of re-commencement after discontinuance, and to provide a "dry," the men having no place to change their clothes but the boiler-house.

The agent of Bosworgey Mine was fined 1*l.* and costs for allowing men to change in the boiler-house, and for not having a proper changing-house.

The agent of East Caradon Mine was fined 4*l.* and costs for four infringments of Rule 7, Sec. 23, *i.e.*, for not having fenced the entrances to a shaft from four levels. A miner, through his own gross stupidity it is true, walked into the shaft at one of the plats and fell 10 fathoms. Luckily no bones were broken, and by the end of a month the man was at his work again; but it is certain that had a fence existed the accident could not have taken place. A fence had been put up there at one time, but the agent had allowed it to be removed for several weeks and had not taken any trouble to have it replaced.

The agent of the Exford Iron Ore Company, Limited, was fined 3*l.* and costs for having allowed gunpowder to be taken into the mine in a barrel and be stored underground, and for not having caused an abstract of the Act to be posted up.

The Deerpark Mining Company, Limited, was fined 1*l.* and costs for having omitted to send me the Annual Return for 1874, after notice had been given.

Finally, the agent of Great Wheal Lovell, was fined 10*l.* and costs for not having provided an adequate amount of ventilation, as required by the first general rule, Section 23. I have already mentioned that this want of ventilation caused the death of one of the men employed.

General Remarks.

In my Report last year I drew attention to a cause that is constantly quoted to me by mine agents as a reason for not having done everything required by the Act, I allude to the poverty of the mining companies. I regret that this poverty has increased, instead of diminished, during the past year. To prevent any confusion, I will add that I do not mean that the mines themselves are poorer in the sense of being less capable of producing ore, but the price of tin, the great staple of my district, is so much lower, that mines which can in any way even pay their expenses consider themselves exceedingly fortunate.

This drop in the price of tin began in 1872, and with a few fluctuations has continued ever since. A glance at the accompanying table shows how serious this drop has been.

Year.	Average Tin Standard.*					
	Common.			Refined.		
	£	*s.*	*d.*	£	*s.*	*d.*
1872	6	18	7	7	0	7
1873	6	4	1	6	6	1
1874	4	11	6	4	13	6
1875	4	1	4	4	2	11

*The standard is the amount paid by the Smelter per cwt. of metal (*white tin*) contained in the ore (*black tin*), as calculated from the result of a dry assay after deduction of 6¼ from the produce per cent. for returning charges.

When it is recollected that mine-owners at the present moment are getting for their produce less than half of what they received four years ago, it is not to be wondered that they are very chary of spending money save for their most urgent necessities. The consequence is, as I stated last year, that many mines have waited till they were actually driven to it, before carrying out some of the provisions of the Act involving a little expense, whereas had they been in a flourishing condition many things would have been put right before I had need to complain.

I have not, however, allowed this plea of poverty to influence me in any case where the health or safety of the persons employed was concerned.

Another consequence of the drop in the market value of the principal commodity produced by the mines of Cornwall is a considerable diminution in their number, and that of the persons employed. Luckily the men thrown out of work have been able to find employment in other parts of England, the Colonies, or the United States, where the practised Cornish miner is always welcome, but as the supply of miners at home is greater than the demand the rate of wages in my district has necessarily declined. I have taken some pains to ascertain the average rates of wages during the last four years, and thanks to the kindness of the managers of eleven of the large mines in Cornwall and Devon I can give the follow-table.

Year.	Average Wages of Men Employed on Tutwork, per Month, of Four Weeks.*		
	£	s.	d.
1872	3	16	3
1873	4	1	6
1874	3	13	7
1875	3	10	0
Average of the 4 years	3	15	4

* N.B.—These amounts express the net earnings of a man, after every deduction has been made for materials, doctor, club, &c. As the men do not work the afternoon or night "cores" on Saturdays, do very little on the measuring days, and do not go underground at all on the pay days, it cannot be said that they work on an average in each week more than five shifts, each of eight hours.

For the information of those who are not acquainted with the Cornish term *tutwork*, I may add that men employed on tutwork are those who are paid so much per fathom excavated, whether in driving, sinking, or stoping. The wages of a tributer, or miner who is paid a certain proportion of the value of the ore raised, are usually somewhat, and occasionally considerably, higher than those of men employed on tutwork.

In conclusion, I regret to say that up to the present time no Special Rules have been established in my district, though I believe that their introduction would tend to improve the discipline of the miners and be the means of preventing some of the accidents.

I have, &c.,
Clement Le Neve Foster,
Inspector of Mines.

To the Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

List of the Fatal Accidents, and Loss of Life arising therefrom, in Dr. C. Le Neve Foster's District, comprising Cornwall, Devonshire, Dorsetshire, and Part of Somersetshire, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed age.	Cause of Death, and Remarks.	Number of Lives Lost.				
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous underground.	Above ground.
1875. Jan. 8	1	Park of Mines	St. Columb	The Park of Mines Consolidated Mining Co., Limited.	Albert Tamblyn	Miner	19	Crushed by fall of timber and stuff, caused by careless working underneath the stopes where he was employed.	–	–	–	1	–
„ 11	2	West Wheal Frances	Illogan	West Wheal Frances Mining Co.	Daniel O'Brian	Ditto	12	Drowned in the bottom of a shaft, having "ridden" down in the skip against orders.	–	–	1	–	–
„ 26	3	Wheal Grenville	Camborne	Wheal Grenville Mining Co.	William Richards	Ditto	44	Premature fall of ground	–	1	–	–	–
Mar. 8	4	Gawton	Tavistock	Gawton Copper Mine Co.	John Palmer	Ditto	40	Unexpected fall of ground	–	1	–	–	–
„ 18	5	Okel Tor	Calstock	S. H. Emmens and H. N. Lay.	Joseph Treloar	Ditto	66	Fell away from a ladder whilst descending a shaft.	–	–	1	–	–
„ 25	6	West Wheal Basset	Redruth	West Wheal Basset Mining Co.	James Dunstan	Ditto	54	Injuries received by his son falling on him while climbing up a ladder in the shaft.	–	–	1	–	–
„ 27	7	Wheal Owles	St. Just	R. Boyns, A. Chenhalls, and others.	William Thomas Batten.	Trammer	11	Fell under the wheels of a tram waggon on an inclined plane, while trying to jump on to it when in motion.	–	–	–	–	1
April 3	8	Trencrom	Lelant	Wheal Trencrom Mining Co.	William Vincent Uren.	Filler	22	Fell down a shaft while crossing it on a plank.	–	–	1	–	–
„ 6	9	Wheal Owles	St. Just	R. Boyns, A. Chenhalls, and others.	David Matthews	Ditto	33	Fell down shaft while arranging an iron bar to stop the skip.	–	–	1	–	–
„ 16	10	Bampfylde	North Molton	Bampfylde Mining Co., Limited.	Hugh Blackford	Miner	49	Fell down a shaft	–	–	1	–	–
May 4	11	Pedn-an-drea	Redruth	Pedn-an-drea United Mining Co.	Henry Bennett	Assisting trammer.	14	Fell under a tram waggon drawn by horses, while trying to ride on it.	–	–	–	–	1

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed age.	Cause of Death, and Remarks.	Number of Lives Lost.				
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous underground.	Above ground.
1875. May 12	12	East Pool - -	Illogan - -	East Pool Mining Co. -	Thomas Hicks -	Miner -	45	Fell down a winze, while sawing a piece of timber, from the breakage of the plank on which he was sitting.	–	–	1	–	–
„ 21	13	Carn Brea - -	Redruth -	Carn Brea Mining Co. -	William Rogers -	Ditto -	51	Fell down some old workings while crossing them from the slipping of a plank.	–	–	–	1	–
„ 28	14	Phœnix - -	Linkinhorne -	Phœnix Mining Co. -	Mark Crapp -	Miner -	20	Buried under some tinstuff, which ran away unexpectedly.	–	–	–	1	–
„ 28	15	Carn Brea - -	Redruth -	Carn Brea Mining Co. -	Hugh Benney -	Labourer -	60	Fell five feet from a plank, while wheeling some coals into an engine-house.	–	–	–	–	1
June 4	16	Polpeor - -	Lelant - -	Polpeor Mining Co. -	Samuel Williams -	Miner -	41	Slipped and fell down a shaft while passing it.	–	–	1	–	–
„ 7	17	Carn Brea - -	Redruth -	Carn Brea Mining Co. -	Thomas Williams -	Ditto -	39	Buried by some stuff while clearing a winze.	–	–	–	1	–
„ 15	18	West Chiverton -	Perranzabuloe -	West Chiverton Mining Co.	Richard May -	Dresser -	9	Crushed by machinery - -	–	–	–	–	1
„ 26	19	Bedford Consols -	Tavistock -	Bedford Consols Mining Co.	Adam Lynn -	Miner -	29	Premature explosion of a hole while tamping.	–	–	–	1	–
„ 29	20	Torbay Iron Mine -	Brixham -	Messrs. Reade & Co. -	John Beavill -	Filler -	18	Probably struck by a stone falling down the shaft.	–	–	1	–	–
July 8	21	Botallack - -	St. Just - -	Botallack Mining Co. -	William Williams -	Miner -	41	Crushed by the fall of a *stilling* or dry wall, probably caused by a blast fired near it.	–	–	–	1	–
„ 16	22	Pedn-an-drea -	Redruth - -	Pedn-an-drea United Mining Co.	Thomas Henry Mills	Dresser -	11	Fell down a shaft whilst playing in it.	–	–	1	–	–
„ 20	23	Carn Brea - -	Redruth -	Carn Brea Mining Co. -	Richard Brown -	Miner -	14	Fell away from a ladder while going down it backwards, *i.e.*, not facing the ladder.	–	–	–	1	–
Aug. 10	24	St. Austell Consols	St. Austell -	St. Austell Consols Mining Co.	William Hocking -	Ditto -	18	Unexpected fall of ground -	–	1	–	–	–

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List of Fatal Accidents—*continued.*

Date.	No. of Accident.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed age.	Cause of Death, and Remarks.	Number of Lives Lost.				
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous underground.	Above ground.
1875. Aug. 11	25	Combellack -	Wendron -	Combellack Tin Mining Co.	Benjamin Richards	Timberman	50	Fell down shaft, knocked away by a plank that fell on him.	–	–	1	–	–
„ 17	26	Pedn-an-drea -	Redruth -	Pedn-an-drea United Mining Co.	William Henry Clemo.	Miner -	19	Premature explosion of a hole while tamping.	–	–	–	1	–
„ 18	27	Carn Brea - -	Redruth -	Carn Brea Mining Co. -	Henry Kitto -	Ditto -	20	Premature explosion of a hole while tamping.	–	–	–	1	–
„ 24	28	St. Aubyn United -	St. Day -	St. Aubyn United Mines Co.	Francis Pope -	Ditto -	52	Irruption of water - -	–	–	–	3	–
					Sampson Pope -	Ditto -	14						
					Richard Mitchell -	Ditto -	14						
„ 31	29	Great Wheal Lovell	Wendron -	Great Wheal Lovell Mining Co.	John Jenkin -	Ditto -	46	Inhaling foul air - - -	–	–	–	1	–
„ 31	30	Dolcoath - -	Camborne -	Dolcoath Mining Co. -	Joseph Trythall -	Ditto -	18	Fell through a tram hole, in consequence of the slipping of a ladder.	–	–	–	1	–
Sept. 10	31	West Wheal Basset	Redruth - -	West Wheal Basset Mining Co.	William Thomas -	Trammer -	50	Thrown on to the stamps axle by the tripping of a tram waggon and crushed to death.	–	–	–	–	1
„ 13	32	Devon Great Consols	Tavistock -	Devon Great Consols Co., Limited.	Nicholas Doidge -	Labourer -	62	Crushed by fall of a timber horse while assisting to erect it.	–	–	–	–	1
Oct. 6	33	Raleigh's Cross -	Brendon Hills -	Ebbw Vale Steel, Iron and Coal Co., Limited.	George Gratton -	Miner -	18	Premature explosion of a hole while tamping.	–	–	–	1	–
„ 19	34	Carn Brea - -	Redruth -	Carn Brea Mining Co. -	Samuel Thomas -	Ditto -	15	Unexpected fall of ground - -	–	1	–	–	–

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed age.	Cause of Death, and Remarks.	Number of Lives Lost.				
									Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous underground.	Above ground.
1875.													
Oct. 23	35	Bulkamore - -	Rattery - -	The Bulkamore Magnetic Iron Ore Co., Limited.	James Wilcocks -	Miner - -	21	Premature fall of ground - -	–	1	–	–	–
Nov. 6	36	New Consols - -	Stoke Climsland	New Consols Tin and Arsenic Works, Limited.	James George -	Dresser -	13	Crushed by a water-wheel - -	–	–	–	–	1
„ 6	37	Restormel - -	Lostwithiel -	Restormel Iron Mine Co., Limited.	John Netherton -	Trammer -	66	Fell down shaft - - -	–	–	1	–	–
„ 19	38	East Pool - - -	Illogan - - -	East Pool Mining Co. -	Daniel Beadle -	Ditto -	28	Fell down shaft while riding up on a skip, being knocked off by a stone falling on him.	–	–	1	–	–
„ 22	39	Gawton - -	Tavistock -	Gawton Copper Mine Co.	Frederick Sleep -	Miner -	44	Unexpected fall of ground - -	–	1	–	–	–
„ 30	40	West Wheal Frances	Illogan - - -	West Wheal Frances Mining Co.	James Thomas -	Ditto -	46	Fall of a borer on his head as he was descending the shaft.	–	–	1	–	–
Dec. 11	41	Penstruthal - -	Gwennap -	Penstruthal Consols Tin and Copper Mining Co., Limited.	Thomas Martin -	Engineman	24	Crushed by some cog-wheels while oiling.	–	–	–	–	1
„ 15	42	New Chiverton - -	Perranzabuloe -	New Chiverton Mining Co.	Joseph Jewell -	Shaftman -	34	Fell down shaft while making a joint between two pumps.	–	–	1	–	–
„ 24	43	Gunnislake Clitters	Calstock -	Gunnislake Clitters Mining Co.	Henry Wedge -	Miner -	18	Unexpected fall of ground - -	–	1	–	–	–
„ 31	44	East Pool - -	Illogan - -	East Pool Mining Co. -	Richard Pascoe -	Trammer -	30	Fell down shaft while trying to jump on to the skip as it passed the plat where he was standing.	–	–	1	–	–
								Totals - -	–	7	16	15	8

TOTAL - - - - 44 Accidents.
„ - - - - 46 Deaths.

LIST of MINES in CORNWALL, DEVONSHIRE, DORSETSHIRE, and Part of SOMERSETSHIRE at work during the Year 1875.

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
			CORNWALL.		
1	Agar, Wheal	Tin	Redruth	Wheal Agar Mining Co.	W. Teague, jun.
2	Ambrose Lake	Tin	St. Neot, Liskeard.	Joseph Taylor & Co.	Peter Temby.
3	Balmynheer	Tin	Wendron	Balmynheer Mining Co., Limited.	R. S. Coates.
5	Basset, Wheal	Tin & Copper	Redruth	Wheal Basset Mining Co.	W. C. Trevena.
4	Basset and Grylls	Tin	Wendron	Basset and Grylls Mining Co.	J. Walker Tyacke.
6	Basset, East Wheal	Tin	Redruth	East Wheal Basset Mining Co.	Richard Pryor.
7	Basset, West Wheal	Tin & Copper	Redruth	West Wheal Basset Mining Co.	James Nicholas.
8	Blackhay	Iron	Withiel	Agra Bank Co., Limited	P. Mitchell, jun.
9	Blencowe Consols	Tin	Grampound Road.	Blencowe Consols Mining Co., Limited.	M. E. Jobling.
10	Blue Hills	Tin	St. Agnes, Scorrier.	Blue Hills Mining Co.	S. Bennetts.
11	Boscoppa	Tin	St. Austell	Francis Barratt and others	Francis Barratt
12	Bosworgey	Tin	St. Erth, Hayle.	Bosworgey Mining Co.	W. Rosewarne.
13	Botallack	Tin & Copper	St. Just, Penzance.	Botallack Mining Co.	S. H. James.
14	Britain, Wheal	Tin & Copper	Blackwater, Scorrier.	Wheal Britain Mining Co.	Joel Phillips.
15	Brothers Wheal	Silver	Harrow-barrow, Callington.	Robert Henderson	J. W. Doble.
16	Budnick Consols	Tin & Lead	Perranzabuloe	W. J. Cook	John Rawlings.
17	Buller, Wheal	Tin & Copper	Redruth	Wheal Buller Mining Co.	Thomas Pryor.
18	Burra Burra	Copper and Zinc.	Kenwyn, Scorrier.	G. F. Beville and John Fawcett.	James Brown.
19	Burrow and Butson	Copper, Lead, and Zinc.	St. Agnes, Scorrier.	Burrow and Butson Mining Co., Limited.	John Christopher.
20	Busy, Great Wheal	Tin	Chacewater	A. Lanyon.	——
21	Busy, North Wheal	Tin	Chacewater	North Wheal Busy Co.	T. Woodward.
22	Calstock Consols	Copper	Calstock, Tavistock.	Calstock Consols Mining Co.	W. B. Collom.
23	Calvadnack	Tin	Wendron	Calvadnack Mining Co.	John Tregoning.
24	Caradon and Phœnix	Copper	North Hill, Launceston.	Caradon and Phœnix Consols Mining Co., Limited.	Charles Pearson.
25	Caradon, East	Copper	Linkinhorne, Liskeard.	East Caradon Mining Co.	James Kellow.
26	Caradon, Great	Copper	St. Ive, Liskeard.	Great Caradon Mining Co.	William Taylor.
27	Caradon, South	Copper	St. Cleer, Liskeard.	South Caradon Mining Co.	John Holman.
28	Cargoll	Lead & Zinc	Newlyn, East	Cargoll Mining Co.	John Jennings.
29	Carn Brea	Tin & Copper	Redruth	Carn Brea Mining Co.	William Teague.
30	Carn Brea, South	Tin & Copper	Redruth	South Carn Brea Mining Co.	James Knotwell.
31	Carn Camborne	Tin & Copper	Camborne	Carn Camborne Mining Co.	Thomas Pryor.
32	Carn Galver	Tin	Zennor and Morvah.	Carn Galver Tin Mining Co., Limited.	John Roach.
33	Caroline, New	Copper	Marazion	Absalom Bennett	Absalom Bennett.
34	Cathedral	Tin	St. Day, Scorrier.	Cathedral Mining Co.	Joseph Michell.
35	Chiverton, East	Lead	Perranzabu-loe, Truro.	East Chiverton Mining Co.	Richard Southey.
36	Chiverton, New	Lead	Perranzabu-loe, Truro.	New Chiverton Mining Co.	James Trewartha.
37	Chiverton, West	Lead & Zinc	Perranzabu-loe, Truro.	West Chiverton Mining Co.	Richard Southey.
38	Coad's Green	Manganese	North Hill, Launceston.	John Goldsworthy	J. Goldsworthy.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
39	Coates, Wheal	Tin	St. Agnes, Scorrier.	Wheal Coates Tin Mining Co., Limited.	W. H. Martin.
40	Colbiggon	Iron	Roche, Bodmin.	The Yniscedwyn Iron, Steel, and Coal Co., Limited.	Richard Thomas.
41	Coldvreath, Higher and Lower.	Iron	Roche, St. Austell.	Ironmasters Co., Limited	W. H. Hosking.
42	Combellack	Tin	Wendron, Helston.	Combellack Mining Co.	John Nancarrow.
43	Comford, Wheal	Tin	Redruth	Wheal Comford Mining Co.	J. L. Peter.
44	Condurrow, South	Tin	Camborne	South Condurrow Mining Co.	W. Rich.
45	Constantine	Iron	Constantine, Penryn.	John Brogden and Son	George Noble.
46	Cook's Kitchen	Tin	Camborne	Cook's Kitchen Mining Co.	Josiah Thomas.
47	Creegbrawse and Penkevil.	Tin	Chacewater	Creegbrawse Tin Mining Co.	Samuel Bailey.
48	Crenver and Wheal Abraham.	Tin & Copper	Crowan, Camborne.	The Crenver and Wheal Abraham United Mines Co., Limited.	William Thomas.
49	Crinnis and Carlyon, Great.	Copper	St. Austell	R. H. Williams and others	R. H. Williams.
50	Crofty, South Wheal.	Tin	Pool, Camborne.	South Wheal Crofty Mining Co.	Josiah Thomas.
51	Cunning United, Wheal.	Tin	St. Just, Penzance.	Richard Boyns, T. S. Bolitho & Sons, and others.	Richard Boyns.
52	Deer Park	Iron	Newlyn East, Grampound Road.	Barton & Co.	J. G. Barton.
53	Deer Park	Tin	Stoke Climsland.	Deer Park Mining Co.	John Goldsworthy.
54	Ding Dong	Tin	Gulval, Penzance.	Ding Dong Mining Co.	William Williams.
55	Dolcoath	Tin & Copper	Camborne	Dolcoath Mining Co.	Josiah Thomas.
56	Dolcoath, New	Tin & Copper	Camborne	New Dolcoath Mining Co.	R. Pryor.
57	Dolcoath, South and Carnarthen Consols.	Copper	Redruth	South Dolcoath and Carnarthen Consols Mining Co.	Cornelius Bawden.
8	Drakewalls	Tin	Calstock, Tavistock.	Drakewalls Mining Co.	William Skewis.
59	Duchy Great Consols.	Copper	Calstock, Tavistock.	The Duchy Great Consols Co., Limited.	James Richards.
60	Duchy Peru	Iron	Newlyn East, Grampound Road.	The Cornish Consolidated Iron Mines Corporation, Limited.	John Parkin.
61	Dunsley Wheal Phœnix.	Tin	Linkinhorne, Liskeard.	Dunsley Wheal Phœnix Co., Limited.	William Skewis.
62	Eliza Consols, Wheal	Tin	St. Austell	Wheal Eliza Consols Mining Co.	R. H. Williams.
63	Eliza, West Wheal	Tin	St. Austell	West Wheal Eliza Mining Co.	R. H. Williams.
64	Emmens United Mines.	Arsenic, Copper, Tin, & Silver.	Callington	S. H. Emmens and others	Henry Bennett.
65	Florence Consols	Tin	Perranuthnoe	George Eveleigh	Peter Skewis.
66	Florence and Tonkin United.	Copper and Iron Pyrites.	Callington	Adam Murray and others	William Verran.
67	Fortune, Great Wheal.	Tin	Breage, Helston.	Great Wheal Fortune Mining Co.	Stephen Harris.
68	Frances, South Wheal.	Tin & Copper	Illogan, Redruth.	South Wheal Frances Mining Co.	A. T. James.
69	Frances, West Wheal.	Tin & Copper	Illogan, Camborne.	West Wheal Frances Mining Co.	Josiah Thomas.
70	Friendly Mines	Tin	St. Agnes, Scorrier.	James Evans and others	James Evans.
71	Glasgow Caradon Consols.	Copper	St. Ive, Liskeard.	Glasgow Caradon Consolidated Mining Co., Limited.	William Taylor.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agen
72	Godolphin, West	Tin	Germoe, Marazion.	West Godolphin Mining Co.	John Pope.
73	Gorland, West Wheal.	Tin & Copper	St. Day, Scorrier.	West Wheal Gorland Mining Co.	John Mayne.
74	Gover	Tin	St. Austell	W. Browne & Sons	R. Hancock.
75	Gravel Hill	Iron	Newlyn East, Grampound Road.	The Cornish Consolidated Iron Mines Corporation, Limited.	John Parkin.
76	Great Work Consols	Tin	Breage, Marazion.	Great Work Mining Co.	William Teague.
77	Great Work, South	Tin	St. Hilary, Marazion.	South Great Work Mining Co.	Samuel J. Reed.
78	Great Work, West	Tin	Breage, Marazion.	West Great Work Mining Co.	Samuel J. Reed.
79	Grenville, Wheal	Tin & Copper	Camborne	Wheal Grenville Mining Co.	Edwin Hosking.
80	Grenville, East Wheal.	Tin & Copper	Camborne	East Wheal Grenville Mining Co.	Edwin Hosking.
81	Gunnislake Clitters	Tin & Copper	Gunnislake, Tavistock.	Gunnislake Clitters Mining Co.	William Skewis.
82	Hendra, New	Tin	Breage, Helston.	New Hendra Mining Co.	Richard King.
83	Hermon, Wheal	Tin	St. Just, Penzance.	John Chenhalls	John Chenhalls.
84	Herodsfoot	Lead	Lanreath, Liskeard.	Herodsfoot Mining Co.	Thomas Trevillion.
85	Hingston Down	Copper	Gunnislake, Tavistock.	The Hingston Down Consols Mining Co., Limited.	James Richards.
86	Illogan Mines	Tin & Copper	Porth Towan, Redruth.	Illogan Tin and Copper Mining Co., Limited.	R. Pryor.
87	Jane, Wheal	Tin	Kea, Chacewater.	Wheal Jane Mining Co.	William Giles.
88	Jane, North	Tin	Kenwyn	North Jane Mining Co.	James Rowe.
89	Jane, West Wheal	Tin and Iron Pyrites.	Chacewater	John Smith	John Smith.
90	Jennings, Wheal	Tin	Gwinear, Camborne.	Wheal Jennings Mining Co.	John Tregoning.
91	Killifreth	Tin	Chacewater	Killifreth Mining Co.	Thomas Googh.
92	Kingston Consols	Lead	Stoke Climsland, Callington.	Kingston Consols Silver-Lead Mining Co., Limited.	G. F. Richards.
93	Kitty, Wheal	Tin	St. Agnes	Wheal Kitty Mining Co.	William Teague.
94	Levant	Tin & Copper	St. Just, Penzance.	Levant Mining Co.	R. White.
95	Levant, North	Tin	St. Just, Penzance.	North Levant Mining Co.	James Bennetts.
96	Lovell, The	Tin	Wendron, Helston.	The Lovell Mining Co.	Joseph Prisk.
97	Lovell, East Wheal	Tin	Wendron, Helston.	East Wheal Lovell Mining Co.	Richard Quentrall.
98	Lovell, Great Wheal	Tin	Wendron, Helston.	Great Wheal Lovell Mining Co.	Joseph Prisk.
99	Ludcott and West Down.	Manganese	Launceston	J. O. Pawle & Robinson	H. J. Nicholls.
100	Maria, Wheal	Tin	Crowan, Camborne.	Wheal Maria Mining Co.	S. S. Noell.
101	Marke Valley	Tin & Copper	Linkinhorne, Liskeard.	Marke Valley Mining Co.	James Seccombe.
102	Mary, Wheal, and Trencrom.	Tin	Lelant	Wheal Mary and Trencrom Mining Co.	T. W. Field.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
103	Mary Ann, West Wheal.	Lead -	Liskeard -	West Wheal Mary Ann Mining Co.	W. G. Nettle.
104	Medlyn Moor -	Tin -	Wendron, Helston.	Medlyn Moor Mine Co. -	Charles Rowe.
105	Mitchell, Wheal -	Tin - -	Breage, Marazion.	William Buckett - - -	William Buckett.
106	Mount and Trebisken.	Iron -	Perranzabuloe	Agra Bank Co., Limited -	P. Mitchell.
107	Mulberry -	Tin -	Lanivet -	Daubuz, Martin, and others	W. L. Martin.
108	Nangiles - -	Tin -	Kea, Chacewater.	Nangiles Mining Co., Limited	Josiah Rowe.
109	New Consols -	Tin & Arsenic	Stoke Climsland, Callington.	New Consols Tin and Arsenic Works, Limited.	Richard Pryor.
110	New Mills - -	Iron - -	Grampound Road.	The New Mills, Ladock, Iron Mines Co.	Alfred Hewlett.
111	Newton Wheal -	Arsenic & Tin	Harrowbarrow, Callington.	The West of England Fireclay, Bitumen and Chemical Co., Limited.	H. Bennett.
112	Northwood, Wheal	Tin -	St. Neot -	Wheal Northwood Mining Co.	Thomas Trevillion.
113	Okel Tor - -	Tin and Arsenic.	Calstock, Tavistock.	H. N. Lay - - -	H. Bennett.
114	Owles, Wheal -	Tin -	St. Just, Penzance.	R. Boyns, A. Chenhalls, and others.	R. Boyns.
115	Padstow - -	Silver-Lead and Copper.	Padstow -	Padstow Mining Co. -	Henry Francis.
116	Park of Mines -	Tin -	St. Enoder, Grampound Road.	The Park of Mines Consolidated Mining Co., Limited.	William Pascoe.
117	Park of Mines, South.	Tin -	St. Enoder, Grampound Road.	Broderick, Parker, and Evans.	James Evans.
118	Pawton - -	Iron - -	St. Breock, Wadebridge.	John Netting - - -	John Netting.
119	Pedn-an-drea - -	Tin - -	Redruth -	Pedn-an-drea United Mining Co.	William Tregay.
129	Peevor, West -	Tin -	Redruth -	West Peevor Mining Co. -	Thomas Pryor.
121	Peevor, Wheal -	Tin -	Redruth -	Wheal Peevor Mining Co. -	A. T. James.
122	Pembroke, New -	Tin & Copper	St. Blazey, Par Station.	Treffry's Estate and others -	John Polkinghorne.
123	Penberthy Crofts -	Tin -	St. Hilary -	Penberthy Crofts Mining Co.	Paul Roach.
124	Penhale and Barton	Tin -	St. Enoder, Grampound Road.	Penhale and Barton Mining Co., Limited.	S. H. F. Cox.
125	Penhale Wheal Vor	Tin & Copper	Breage, Helston.	Penhale Wheal Vor Tin and Copper Co., Limited.	W. H. Martin.
126	Penhallow Moor -	Iron - -	Newlyn, East, Grampound Road.	The Cornish Consolidated Iron Mines Corporation, Limited.	John Parkin.
127	Penhalls - - -	Tin - -	St. Agnes, Scorrier.	Penhalls Mining Co. -	S. Bennetts.
128	Penstruthal Consols.	Tin & Copper	Gwennap -	Penstruthal Consols Tin and Copper Mining Co., Limited.	William Teague.
129	Perseverance -	Tin - -	Redruth -	Perseverance Mining Co., Limited.	William Rich.
130	Phœnix - -	Tin & Copper	Linkinhorne, Liskeard.	Phœnix Mining Co. - -	W. Hosking.
131	Phœnix, South -	Tin -	Linkinhorne, Liskeard.	Charles Pearson - -	James Kelly.
132	Phœnix, West -	Tin -	Linkinhorne, Liskeard.	West Phœnix Mining Co. -	W. Hosking.
133	Polberro - -	Tin -	St. Agnes, Scorrier.	John Taylor and Sons and others.	John Hancock.
134	Poldice - -	Tin & Copper	St. Day, Scorrier.	Sir F. M. Williams - -	S. Tredinnick.
135	Poldice, West -	Tin -	Gwennap, Scorrier.	Sir F. M. Williams and others.	S. Tredinnick.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
136	Polgooth, Great	Tin	St. Austell	Great Polgooth Mining Co.	Richard Hancock.
137	Polgooth, United	Tin	St. Ewe, St. Austell.	James Haddock	John Wasley.
138	Polpeor	Tin	Lelant	Polpeor Mining Co.	Wm. Rosewarne.
139	Polrose Mine	Tin	Breage, Helston.	Polrose Mining Co.	T. Roach.
140	Pool, East	Tin, Copper, Wolfram, Cobalt, and Bismuth.	Illogan, Camborne.	East Pool Mining Co.	John Maynard.
141	Pool, North	Copper	Illogan, Redruth.	North Pool MiningCo., Limited	Joseph Vivian and Son.
142	Prince of Wales	Tin & Copper	St. Mellion, Callington.	Prince of Wales Mining Co.	John Pryor.
143	Prince Royal Mine	Tin	St. Agnes, Scorrier.	— Duignan and L. Walsall	H. Bennetts.
144	Prince Victor	Silver-Lead	Launceston	Broderick and Parker	James Evans.
145	Providence	Tin & Copper	St. Ives	The Providence Mines Co.	William Hollow.
146	Providence, South	Tin	Towednack, St. Ives.	South Providence Mining Co.	William Brabyn.
147	Prussia, Wheal	Tin	Redruth	Wheal Prussia Mining Co.	William Tregay.
148	Queens	Iron	Roche	Queens Iron Mine Co., Limited.	John Kessell.
149	Relistian Consols	Tin	Gwinear, Camborne.	Relistian Consols Mining Co.	John Curtis.
150	Restinnis & Treffry	Iron	St. Blazey, Par Station.	The St. Blazey Minerals Co., Limited.	Thomas Floyd.
151	Restormel	Iron	Lostwithiel	Restormel Iron Mining Co., Limited.	J. Woolcock.
152	Retallack, Great	Zinc & Iron	Perranzabuloe, Truro.	Great Retallack Mining Co.	John Harris.
153	Rosewall Hill and Ransom United.	Tin	Towednack, St. Ives.	Rosewall Hill and Ransom United Mining Co.	Wm. Buglehole.
154	Rosewarne, New	Tin	Gwinear	New Rosewarne Mining Co.	Edwin Hosking.
155	Roskear, South	Tin & Copper	Camborne	South Roskear Tin and Copper Mining Co.	William Skewis.
156	Roskear, West	Tin & Copper	Camborne	West Roskear Mining Co.	Hugh Stephens.
157	Rostidgon and Treliver Levels, Glebeland and Little Skews.	Manganese	St. Wenn	Demelza Hematite Ore Co.	John Carr.
158	Ruby and Trethurgy	Iron	St. Austell	Alfred Abbott	Edward Faulconer.
159	St. Agnes Consols	Tin & Copper	St. Agnes	J. B. Reynolds & Co.	Joseph Vivian.
160	St. Aubyn United	Tin & Copper	Redruth	St. Aubyn United Mines Co.	John Michell.
161	St. Austell Consols	Tin & Copper	St. Austell	St. Austell Consols Mining Co.	John Nicholls.
162	St. Blazey Mines, New.	Tin	St. Blazey	New St. Blazey Tin Mines, Limited.	Philip Rich.
163	St. George	Silver-Lead	Launceston	Broderick and Parker	James Evans.
164	St. Ives Consols	Tin & Copper	St. Ives	G. Treweeke	G. Treweeke.
165	St. Just Amalgamated.	Tin	St. Just, Penzance.	St. Just Amalgamated Mining Co., Limited.	Richard Pryor.
166	Seton, West Wheal	Tin & Copper	Camborne	West Wheal Seton Mining Co.	Josiah Thomas.
167	Sisters, Wheal	Tin	Lelant, Hayle	Wheal Sisters Mining Co.	T. W. Field.
168	South Wendron	Tin	Wendron, Helston.	H. S. Middleton	Joseph Prisk.
169	Spearn Moor	Tin & Copper	St. Just, Penzance.	Spearn Moor Mining Co.	James Bennetts.
170	Tamping Quarry	Stone	Tuckingmill, Camborne.	Thomas Eudey	Thomas Eudey.
171	Terras, South	Iron	Grampound Road.	South Terras Mining Co., Limited.	J. H. James.
172	Tincroft	Tin	Pool, Redruth.	Tincroft Mining Co.	William Teague.
173	Tincroft Consols, Old.	Tin	Nancledrea, Penzance.	J. B. Reynolds and Co., Limited.	James Pope.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
174	Tolcarne, South	Copper	Camborne	South Tolcarne Mining Co.	Joseph Vivian and Son.
175	Tolgus, West Wheal	Copper	Illogan	West Wheal Tolgus Mining Co.	John Hancock.
176	Treamble	Lead & Iron	Perranzabuloe	The Cornish Consolidated Iron Mines Corporation, Limited.	John Parkin.
177	Treburgett, Old	Silver-Lead	St. Teath, Camelford.	Old Treburgett Mining Co., Limited.	William Hancock.
178	Tregardock	Lead and Copper.	St. Teath. Camelford	The Tregardock Silver-Lead Mining Co., Limited.	J. Spargo.
179	Tregeagle	Tin	St. Neot	J. Taylor & Co.	Peter Temby.
180	Tregonetha	Iron	Roche	Thomas Fenwick	Samuel R. Cocks.
181	Treleigh Wood	Tin	Redruth	Treleigh Wood Mining Co.	Edwin Hosking.
182	Tremaddock	Tin	St. Neot	Herbert John Marshall	Nicholas Vivian.
183	Tresavean	Copper	Gwennap	Edward and James Michell	Edward Michell.
184	Tresellyn	Tin	Altarnun	Tresellyn Tin Mining Co., Limited.	Joseph Hodge.
185	Treskerby, North	Tin	St. Agnes, Scorrier.	North Treskerby Mining Co.	Richard Pryor.
186	Tretoil	Iron	Bodmin	The Tretoil Tin and Iron Mining Co., Limited.	W. Fletcher Pagen.
187	Trevarrack	Tin & Copper	Lelant	J. B. Reynolds & Co.	James Pope.
188	Trevaunance, Wheal	Tin	St. Agnes, Scorrier.	Francis Gilbert Enys	G. C. Hancock.
189	Trevegean, Great	Tin	St. Just, Penzance.	Great Trevegean Mining Co.	Peter Eddy.
190	Trumpet Consols	Tin	Wendron, Helston.	Trumpet Consols Mining Co.	Richard Quentrall.
191	Trumpet, New, and Lovell United.	Tin	Wendron, Helston.	New Trumpet and Lovell United Mining Co.	Richard Quentrall.
192	Unity Wood, Wheal	Tin	Scorrier	Wheal Unity Wood Mining Co.	George E. Tremayne.
193	Uny, Wheal	Tin	Redruth	Wheal Uny Mining Co.	William Rich.
194	Vor United, Great Wheal.	Tin	Breage, Helston.	Great Wheal Vor United Mining Co.	Stephen Harris.

DEVONSHIRE.

1	Ashburton, East	Tin	Ilsington	Bettely, Horswill, & Co.	James Richards.
2	Bampfylde	Copper and Iron.	North Molton	Bampfylde Mining Co., Limited.	James Juleff.
3	Bedford Consols	Copper	New Quay, Tavistock.	Bedford Consols Mining Co.	G. Rowe.
4	Bedford United	Copper and Arsenical Pyrites.	Tavistock	Bedford United Mining Co.	William Phillips.
5	Belstone	Copper	Okehampton	Belstone Mining Co., Limited	James Neill.
6	Betsy, Wheal	Silver-Lead	Tavistock	R. Donaldson	William George.
7	Birch Tor	Tin	North Bovey	Birch Tor Mining Co.	William Skewis.
8	Bottle Hill, Old	Tin	Plympton	W. Y. Watson & Co.	R. Unsworth.
9	Bowden Common	Manganese	Brentor	W. Newton and W. Jones	W. Newton.
10	Brixham	Iron	Brixham	W. Browne & Sons	W. Browne & Sons.
11	Brookwood	Copper	Buckfastleigh	T. Trevillion and John C. Isaac	Thomas Trevillion.
12	Bulkamore	Iron	Buckfastleigh	The Bulkamore Magnetic Iron Ore Co., Limited.	T. G. Dugard.
13	Buzzacott	Lead	Combmartin	John Pearson	S. Mitchell.
14	Chillaton and Hogstor.	Manganese	Milton Abbot, Lew Down, R.S.O.	Sims Brothers	William Doidge.
15	Crebor, Wheal	Copper	Tavistock	Jehu Hitchins	J. Andrews.
16	Crowndale, New	Tin & Copper	Tavistock	James Murray & J. Legassick	Robert Toye.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
17	Dean - -	Copper and Iron.	Buckfastleigh.	Sir George Elliot -	Samuel Lake.
18	Devon and Cornwall.	Umber -	Ashburton -	John Netting, J. R. Paull -	John Netting.
19	Devon Great Consols	Copper and Arsenic.	Tavistock -	Devon Great Consols Co., Limited.	James Richards.
20	Devonshire Manganese Mine.	Manganese	Lamerton, Bridestowe.	J. Lomas, H. Scholefield, & Co.	William Hooper.
21	Doddiscombeleigh -	Manganese	Doddiscombeleigh, Exeter.	The Doddiscombeleigh Manganese Mining Co., Limited.	James Dunsmore.
22	Edgecumbe -	Manganese	Milton Abbot, Tavistock.	Edgecumbe Manganese Mining Co.	R. Walters.
23	Emma, Wheal -	Copper -	Buckfastleigh	William Battye - -	Sampson Keast.
24	Exmouth, South -	Iron -	Hennock -	South Exmouth Co. -	John Nicholls.
25	Florence - -	Iron -	North Molton	Florence Mining Co., Limited	Dudley J. C. Bush.
26	Franco Consols -	Copper -	Buckland Monachorum.	Franco Consols Mining Co., Limited.	William Doidge.
27	Frank Mills -	Silver-Lead	Christow, Exeter.	Frank Mills Mining Co. -	John Nicholls.
28	Friendship, Wheal	Copper and Arsenic.	Mary Tavy	J. C. Lanyon & Son -	John James.
29	Fursdon Great Consols.	Copper -	South Zeal, Okehampton.	Fursdon Great Consolidated Copper Mining Co., Limited.	M. E. Jobling.
30	Furze Hill -	Tin -	Horrabridge, Plymouth.	Furze Hill Tin Mining Co., Limited.	William Doidge.
31	Gawton - -	Copper and Arsenic.	Gawton Quay, Tavistock.	The Gawton Copper Mining Co.	George Rowe.
32	Girt and Holston Down.	Iron - -	Combmartin	Girt and Holston Down Mining Co., Limited.	H. A. Holden.
33	Haytor Vale -	Iron -	Ilsington, Newton Abbot.	William Browne - -	William Grose.
34	Kingsteignton Clay Mine.	Potter's Clay	Kingsteignton, Newton Abbot.	Watts, Blake, Bearne, & Co.	L. E. Bearne.
35	Lady Bertha -	Arsenic -	Buckland Monachorum, Tavistock.	H. N. Lay - - -	R. Hawke.
36	Lew Trenchard -	Manganese	Lew Down, Lifton.	J. T. Johnson - -	J. Goldsworthy.
37	Lifton Mine -	Manganese	Lifton -	Sims Brothers - -	William Doidge.
38	Lower Kiln Close and Brickfield.	Potter's Clay	Kingsteignton, Newton Abbot.	Brownes, Goddard, & Hatherly.	E. Goddard.
39	Lucky, Wheal -	Tin - -	Walkhampton	James J. Cowell - -	John Goldsworthy.
40	Marcia - - -	Iron - -	North Molton.	Marcia Hematite Iron Mining Co., Limited.	Thomas J. Spence.
41	Maria, West, and Fortescue.	Copper and Arsenic.	Lamerton, Tavistock.	West Maria and Fortescue Consolidated Mining Co.	William Skewis.
42	Mary Hutchings, Wheal.	Tin - -	Plympton -	Wheal Mary Hutchings, Limited.	Henry Miners.
43	Narracott - -	Manganese	Milton Abbot, Lew Down R.S.O.	Narracott Manganese Mining Co., Limited.	John Goldsworthy.
44	Newton St. Cyres	Manganese	Newton St. Cyres, Exeter.	Sims Brothers - -	William Doidge.

List of Mines—*continued.*

No.	Name.	Minerals raised.	Situation and Postal Address.	Owner.	Agent.
45	Noemie	Iron	Shaugh, Roborough.	Lewis and Casper	R. Stevens.
46	Poldice, Wheal	Tin	Buckland Monachorum, Tavistock.	Wheal Poldice Mining Co.	James Murray.
47	Poltimore	Iron	North Molton	Allan Granger	Allan Granger.
48	Riley	Manganese	Ilsington, Newton Abbot.	Brownes and Co.	W. Grose.
49	Russell, Wheal	Copper	Tavistock	The Wheal Russell Co.	J. Matthews.
50	Shaugh	Iron	Bickleigh	John Brogden and Sons	John Peacock.
51	Sleeperton Tor	Tin	Belstone, Okehampton.	C. Langley, R. M. Jeffery, S. Oldridge.	R. M. Jeffery.
52	South Ward	Silver-Lead	Beerferris, Calstock, Tavistock.	South Ward Mining Co.	R. Goldsworthy.
53	Spreacombe	Iron	Georgeham, Barnstaple.	The Yniscedwyn Iron, Steel, & Coal Co., Limited.	George Boyles.
54	Stockland	Iron	Braunton, Barnstaple.	Edgar Aldous	Edgar Aldous.
55	Tamar, North	Silver-Lead	Beeralston, Tavistock.	J. Myerscough & Co.	John Goldsworthy.
56	Tamar Valley	Silver-Lead	Beerferris, Calstock, Tavistock.	G. Pell	S. G. Truran.
57	Tavy Consols	Arsenic	Tavistock	Joseph Bulkley	W. R. Footner.
58	Teignbridge	Potter's Clay	Kingsteignton	Whiteway and Co.	John Mallett.
59	Torbay	Iron	Brixham	Reade & Co.	C. Reade.
60	Ugborough	Iron	Ugborough, Ivybridge.	Harrison and Son	Harrison & Son.
61	Upton	Iron	Brixham	The Upton Hæmatite Iron Ore Co., Limited.	James Cock.
62	Vitifer, East	Tin	North Bovey, Moretonhampstead.	East Vitifer Tin Mining Co.	James Browning.
63	Watersmeet	Iron	Lynton	Cameron and Duncan	John Comer.
64	West Combmartin	Silver-Lead	Combmartin, Barnstaple.	West Combmartin Silver-Lead Mining Co., Limited.	Joseph Page.
65	Whiteworks, New	Tin	Princetown	New Whiteworks Mining Co.	John Rosewarne.
	DORSETSHIRE.				
1	Furzy Ground	Potter's Clay	Wareham	W. J. Pike	L. W. Pike.
2	Seymour's	Potter's Clay	Branksea	The Branksea Island Co., Limited.	R. H. Fry.
	SOMERSETSHIRE.				
1	Blackland	Iron	Exford	The Exford Iron Ore Co., Limited.	R. G. Cripps.
2	Brendon Hills and Eisen Hill.	Iron	Brendon Hills.	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	Henry Skewis.

Mr. T. F. Evans' Report.

Report upon the Inspection of Metalliferous Mines in the Counties of Anglesey, Brecon, Cardigan, Carnarvon, Denbigh, Derby, Flint, Merioneth, Montgomery, Radnor, Shropshire, and the Isle of Man, for the Year 1875.—By Thomas Fanning Evans, Esq.

Sir, Amlwch, Anglesey, 16th March 1876.

I have the honour to make a report of my proceedings during the year 1875, as an Inspector under "The Metalliferous Mines Regulation Acts, 1872 and 1875."

In the first place I have to remark that my district has been considerably reduced in extent since the date of my last Report. Finding it, as originally arranged and assigned to me, to be so extensive and scattered that I could not perform its duties in a manner satisfactory to myself, I ventured to represent to you the desirability of a re-arrangement which should so circumscribe its extent as to bring every part within easy reach of an unassisted inspector.

You were pleased to consent to the distribution of the counties of Cumberland, Durham, Lancaster, Northumberland, Westmorland, and York among my brother inspectors, Messrs. Bell, Wardell, and Willis.

This re-arrangement was not completed until July, and the counties named above were therefore under my charge until that date; but as it has been thought desirable that the register of accidents during the whole year in the counties thus transferred should not be divided between my reports and those of my successors, I have handed to them a list of the casualties which occurred during my inspection, and my notes made at the time of their occurrence. They will appear in the Reports of those gentlemen.

I have reason to believe that this scheme will secure increased efficiency in the inspection of the Metalliferous Mines affected by the change.

The passing during the last session of Parliament of "The Metalliferous Mines Regulation Act, 1875," as supplementary to the principal Act, produces for the first time a feature in the Reports of the Inspectors of Metalliferous Mines which cannot fail to make them far more valuable for statistical uses than those which have hitherto been rendered. Under the principal Act the statistics of produce and persons employed would in my present Report have been for the year 1874 only, but under the amendatory Statute, which requires the returns from mine-owners to be made on the 1st February in each year for the year preceding, I am enabled to present to you the results also of returns which may be regarded as reliable for the year 1875.

In my last Report I referred, under the heading of legal proceedings, to a case in which the Cwmorthin Slate Company appealed against the decision of the Justices in Petty Sessions, in order, by means of a test-case, to try the question whether the so-called quarries of Merionethshire were mines to which the Act applied or not. The conviction of the defendants by the County Justices was confirmed in the Court of Queen's Bench in June last, and the trial was thus reported in one of the legal journals :—

Q.B. Sims v. Evans. June 2.

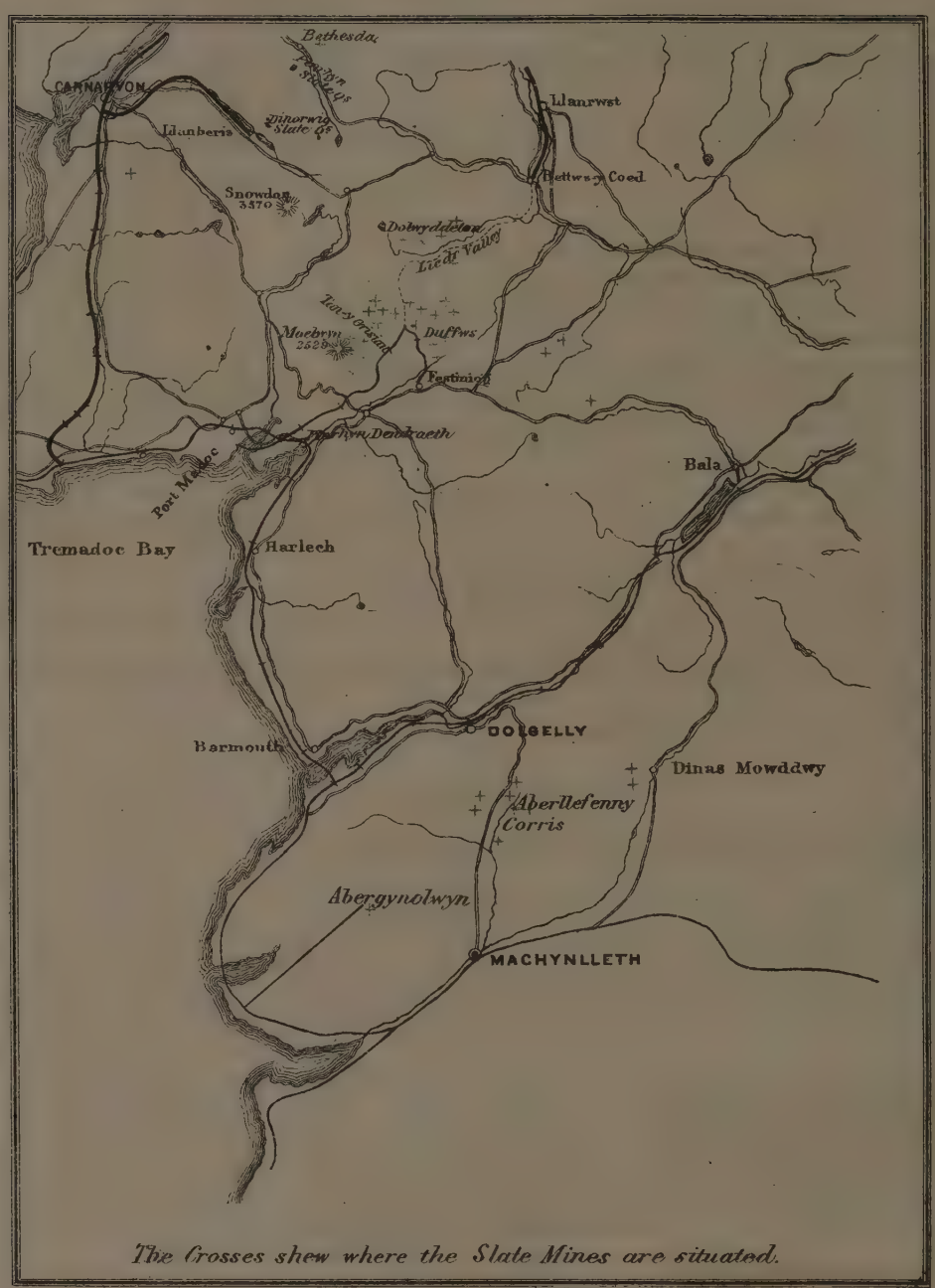
Metalliferous Mines Regulation Act, 1872 (35 & 36 Vict. c. 77).

Slate Quarries.

A slate quarry, worked by means of underground workings by levels, is a mine within the intention of 35 and 36 Vict. c. 77.

This was a case stated by justices under 20 & 21 Vict. c. 43.

The appellant is the owner of a slate quarry which is worked by means of underground workings, levels being driven straight into the side of a hill in which the slate is found. It is worked like other mines, and the workmen are divided, as in other cases, into three classes—viz., miners, rockmen, and labourers.



The Crosses shew where the Slate Mines are situated.

Dangerfield, Lith. 22, Bedford St. Covent Garden.

An information was laid by the respondent, the official inspector of mines for the district in which the quarry is situate, against the appellant for not keeping a register of the boys, women, and children employed by him at the quarry, as provided by section 6 of the Act. The justices convicted the appellant, subject to the opinion of this court as to whether the slate quarry in question was a mine within the meaning of the Act.

Brown, Q.C., and Meadows White, for the appellant.

R. G. Williams, Q.C., and Coxon, for the respondent, were not called on.

BLACKBURN, J.—This is clearly a mine under the definition of a mine in section 41. And by section 3 the Act is applied to all mines except mines of coal, iron-stone, shale, and fire-clay, which are those provided for by the Coal Mines Regulation Act. It cannot be said that the title "Metalliferous Mines Regulation Act" modifies the meaning of section 3. The decision of the magistrates was, therefore, right.

QUAIN and FIELD, J.J., concurred.

Attorney for the appellant, John Cann.

Attorneys for the respondent, Bloxam, Ellison, and Co.

This settlement of the point brings under my inspection all those slate mines of North Wales which, although carried on in such a manner as to render them mines in every respect, have hitherto been styled quarries, in common with those great workings in their immediate proximity where the same mineral is raised by operations prosecuted in open daylight.

As shown by the accompanying map, the greater number and the most important of these mines are in the neighbourhood of Festiniog, in the county of Merioneth; there are several more further south, near Corris and Abergynolwyn, and a few scattered here and there in the county of Carnarvon.

The figures giving the number of persons they employed and the quantities of slate they produced are obtained from the Annual Returns made for both years, and are, so far as I am aware, the first statistics ever published relating to these mines.

My Report this year contains:—

1. The usual list of fatal accidents during the year;
2. A list of the mines of my district, giving their situation and the names and addresses of the owners and agents for the year 1874, obtained from the Returns made on the 1st August 1875, under the unamended Act;
3. A similar list for the year 1875, compiled from the Returns sent in on the 1st February 1876, under the amendatory Act;
4. Summaries of the persons employed and of the minerals produced during the year 1874; and
5. Similar summaries for the year 1875.

Fatal Accidents.

The fatal accidents during the year are thus classified:—

Falls of Ground.

Falls of sides	2	accidents, causing	3	deaths.
„ „ roof	4	„	5	„

In Shafts.

Ropes and chains breaking	1	„	2	„
Falling from part way down	3	„	3	„
Things falling from part way down	1	„	1	„

Miscellaneous Underground.

Explosions of gunpowder	4	„	5	„
By machinery underground	1	„	1	„
Sundries underground	6	„	6	„

On Surface.

By machinery	4	„	4	„
Miscellaneous	1	„	3	„
Making a total of	27	accidents and	33	deaths.

The remarks made against each accident in the detailed list serve generally as a sufficient explanation of the nature of the casualty, but there are a few cases on which it behoves me, perhaps, to make some brief additional observations. I should here remark, that owing to the changes in my district during the past year, made in the first place by the addition of the slate mines of North Wales to the mines previously under my inspection, and the subsequent severance of the northern counties referred to in my first page, it would not be fair to make a comparison between the two years as to the number of deaths arising from the various causes under which the fatalities are classified. In the class—

Falls of Ground.

Six accidents caused eight deaths, making a trifle over 24 per cent. of the total number for the year. The proportion does not appear high when compared with those recorded by the inspectors for other districts for previous years; but I still retain the conviction, expressed in my report for last year, that increased efficiency in the management and greater watchfulness on the part of the agents would yet largely diminish the number of accidents of this kind. Four of the deaths were caused by the breaking of timber set for the purpose of supporting waste. It is seldom possible to calculate with certainty the required strength of timber used under the conditions which usually obtain in work of this nature, and the judgment and experience of the miner become of necessity his only guides; but he should for that very reason be doubly careful to secure safety by seeing that the strength of the timber employed is always greatly in excess of the weight it may be called upon to sustain. When fatal accidents occur from the giving way of timber and falls of ground or stuff, mine agents generally seem to consider themselves freed from the responsibility when they make it transpire in the evidence given at inquests that timber is not stinted, and that the men are always supplied with any quantity they may like to call for. This is commendable as far as it goes, but it is without doubt the duty of a mine agent to satisfy himself that all the timbering done in his mine, is done in a thoroughly sound, efficient, and miner-like manner.

In one at least of the cases which appear in my list the accident would have been averted if the condition of the timber had been examined before putting it into use. In others, the accidents appear to have arisen to a great extent from the negligence or ignorance of the men themselves in choosing and setting the timber employed; but, as previously remarked, I do not consider that this fact ought to be held as more than a partial excuse for the employers. Accident No. 23 was of an unusual nature. Instead of being the victims of a fall of ground upon them—the ordinary manner in which deaths arise from this cause—these two men were dropped down an underground shaft by the falling away of the rock on which they were standing. It slid into the shaft while they were busily engaged upon their work. At the inquest some of the jurors expressed their regret that the poor fellows had not taken the usual precaution of securing themselves by means of ropes, and the manager explained in reply, that this was invariably done in his mine where danger was in the least degree suspected, but that this fall was so unexpected that if his special attention had previously been called to the place he would in all probability have pronounced it perfectly safe. His remarks to this effect were confirmed by several men who worked close by, and who seemed to regard the accident as one which nobody could have foreseen. There was a hidden joint which, when I visited the place, displayed a surface as smooth as that of a writing slate.

Accidents in Shafts.

Ropes and Chains Breaking.

I have one accident under this heading to which I wish specially to refer. As will be seen by a reference to accident No. 10 in my list, this took place at the Snailbeach Mine, in Shropshire, and caused the death of two men. They had been employed as timbermen for many years, and at the time of the accident were engaged upon some necessary repairs of the timber-work in one of the most important shafts of the mine. In order to enable them to perform this work they had to be lowered from the surface by means of a capstan worked by men, a nine-inch rope, and a cage or gig in which they stood while descending and ascending and which served as their platform while they were performing their work in the shaft. While they were thus engaged the rope gave way and they were precipitated to the bottom of the shaft, a vertical distance of 150 yards. Although the age of the rope was so great that I failed to ascertain at the inquest how long it had been in use, it appeared to be strong enough to bear a much heavier weight than that applied to it on this occasion; but an examination of the part that broke showed very clearly that the coupling by which it was attached to its load had not been attended to for a long time, and as it transpired in evidence that this important

duty had been assigned to one of the deceased men—a man chosen for his experience and skill—the agents of the mine were to some extent freed from blame. It is well known that ropes, whether of iron or of hemp, almost always give way either inside the socket into which the end is inserted, or exactly at its top-point A. in the accompanying sketch.

This fact shows the importance of frequent and thorough examinations at this part of all ropes on which human life and safety depend. A fresh hold should be taken as soon as the least defective appearance is detected. The process of joining ropes to each other or to the loads they are intended to carry is one which demands much care and skill. In a steel rope which gave way recently at a mine in my district, the appearance of the broken strands indicated too clearly that many of the wires had been severed in the operation of attaching the socket.

Falling from part way down.

The accidents from this cause do not appear to me to require any other comment than the remarks made upon them in the list. One man fell away from a ladder while in a state of intoxication, and another rashly trusted his weight to a piece of rotten timber in an abandoned mine, which he and some fellow workmen had taken as a private venture with the intention of re-opening.

Things falling from part way down.

Under this heading I have only one accident to notice. It occurred at the Ballacorkish Mine, in the Isle of Man. A small stone came down the shaft while the deceased was filling a kibble at the bottom, and hit him on the head. The injury was at first supposed to be trifling, and the man walked home apparently not much the worse for it, but he died in a few hours after reaching his dwelling.

Miscellaneous Underground.

Explosions of Gunpowder.

In this class I have four accidents, which caused five deaths.

In one case, No. 8, that which occurred at the Lilleshall Lime Company's Mine, my colleague, Mr. Wynne, received the notice and attended the inquest, not being aware at the time that it was within my district. From the notes made by Mr. Wynne at the inquest, as stated in my list, it would appear that the deceased was stemming a hole, and that the charge exploded while he was using an iron stemmer, after he had put on two lots of stemming. I have heard this stated so often in the case of premature explosions of powder that I have been almost forced to believe the statements made to me. If they are true, that clause of the Act which prohibits the use of the iron stemmer for the first portion of the stemming has failed to remove entirely a danger to which the working miner is continually exposed. The fourth accident from this cause happened at the Great Laxey Mine, in the Isle of Man. It resulted in two deaths. Two men working in the 170 fathom level were charging a hole which they had bored, when the powder exploded with such violence as to cause the death of both. The evidence given at the inquest showed that these men used only the iron stemmer in stemming the charge. The witnesses, all miners working close by at the time, were evidently anxious to blame the tin-plate charger with which the charge was inserted, or rather jerked, into the hole; but I believe I am correct in asserting that the disaster occurred through the disregard of that section of the Act which prohibits the use of an iron stemmer for the first part of the stemming, and which had been duly made known to the men and provided for by the agents.

These accidents form a heavy per-centage of each year's total. There is a remedy both simple and inexpensive. It is only to put the charges of powder into paper bags. In one

mine with which I have been acquainted for some years, accidents from the explosion of charges of powder were fearfully frequent until this expedient was tried and adopted. Since then I do not think there has been a single instance. When at the inquest on the two men killed at Laxey, I mentioned this to the coroner and jury. Some of the jurors who had worked as miners heartily approved of my suggestion, but the manager and the workmen present expressed strong objections, on the plea that holes so charged did not do so much execution. This is the case to a trifling extent, but it is to be hoped that when mine owners and mine agents are made aware, by means of the statistics thus collected, of the number of deaths and injuries occurring yearly from this cause, they will not neglect so simple a precaution for the sake of a gain so small as to be hardly appreciable.*

By machinery underground.

The only case under this heading is that of a man killed at the Ratgoed Slate Mine. As stated in my list, he was struck on the head by the handle of a crab winch. The accident having occurred before these mines were proved to be under the Act, I can give only the particulars recently supplied me by the agent.

Sundries underground.

Six accidents and six deaths appear in this class. Of these three occurred at the slate mines before they came under my inspection. Upon the remaining three there is little to be said, beyond the remarks made against them in the list. One man is supposed to have made a false step through having lost his light; another fell from his working place to the level below while hastily running to assist a youth who was coming down a rather awkward chain to join him; and the third, a youth working in the Braich Goch Slate Mine, near Corris, fell over the edge of an underground precipice while following his father to their working place in the mine.

On Surface.

By Machinery.

Four accidents caused an equal number of deaths.

The first case is that of a little boy of 10 years, who lost his life through putting his foot between the rolls of an ore-crusher which he was feeding, and which dragged in a great part of his body. The coroner and jury, in terms which I heartily endorsed, condemned the practice of employing children of such tender years, and rebuked the agent of the mine in a very severe manner for allowing this infant to attend to powerful and dangerous machinery.

No. 9 in my list was an accident which caused three deaths. It occurred at the Welsh Slate Company's mine, before the slate mines came under my inspection, but the particulars given against in the column for the Cause of Death and Remarks are extracted from a return courteously supplied me by Mr. G. J. Williams, the coroner for the county of Merioneth.

No. 24 was an accident of so serious a nature that the coroner, after conferring with me upon the matter, decided on adjourning the inquest a second time, in order to obtain evidence which was considered essential to an exhaustive inquiry. The deceased was employed at the foot of an incline by which slates are brought down from the Cwmorthin slate mine to the railway originally constructed for the carriage of slate from the mines of Festiniog to the shipping place at Portmadoc, but now known to engineers all over the world as a passenger carrying line, under the name of the Festiniog Narrow Gauge Railway. It was the duty of the deceased to hook and unhook the waggons by which the slates are conveyed, and to place the loaded ones on a siding in readiness for the train for Portmadoc. While he was thus engaged a waggon came down the incline with such rapidity that he could not get out of its way in time, and mutilated him so fearfully that he must have died instantaneously.

On examining the wreck of the runaway waggon it was found that the link by which it was attached to another waggon had given way while the two were being lowered by means of the break at the top of the incline. I saw the broken link a few hours after the accident, and came to the conclusion that it had been broken for a long time before this occurrence, and that the constant strain to which it was subjected had for a considerable period been

* In a correspondence with my colleague, Dr. C. Le Neve Foster, the inspector for Cornwall and Devon, which has taken place between us since the writing of the above remarks, a note from him says:—"In the "Hartz the miners are compelled by law to put the powder into a cartridge made of newspaper or any waste "paper. The late Professor Callon of the *École des Mines*, says that loose powder should never be used. "If cartridges are used, he says, there is no necessity for bronze or copper tamping bars."

gradually opening the gap through which the coupling hook eventually slipped. Some of the evidence upon this point given at the inquest went in direct opposition to my opinion, but perfectly unbiassed witnesses, whose experience in ironwork rendered their evidence valuable, confirmed the view I had at first taken of the matter. The waggons are the property of the Railway Company, who are responsible to the mine proprietors for their condition, and as it was elicited at the inquest that no one was appointed to examine them before sending them up to the mines it was made abundantly clear that the gross neglect which led to the accident may without injustice be attributed to the Railway Company.

The coroner's jury returned the following verdict:

1. That the broken link was in an imperfect state when the waggon was delivered at the bottom of the Cwmorthin incline. 2. That the accident was not the result of any gross neglect of any individual person; but they seriously recommended that all links and hooks to be attached to waggons should, in future, be tested at the manufactory, and inspected by an official specially appointed by the Festiniog Railway Company for that purpose, each time before they are to be used.

Having heard while attending this lengthy inquiry that accidents from this cause had been of very frequent occurrence, I asked the question of one witness, a man who had spent many years on these inclines, and was told in reply that he had himself seen many accidents from the breaking of links and that it had notoriously been a matter of complaint that the links were not properly made.

Another testimony to the frequency of the occurrence is a house situated on the other side of the main line of railway, below the foot of the incline at which this casualty took place. It bears yet marks in its roof of a severe riddling received from the contents of a waggon which broke loose in a similar manner some time ago. I also picked up a broken hook upon one of these inclines a few days after this accident, the fracture of which proved it to have been in a defective state for a considerable period before it parted. These facts prove the negligence to have existed for a long time and to a serious degree, but it is to be hoped that this strict inquiry will have brought home to the Railway Company a proper sense of their responsibilities and duties in a matter which involves the safety not only of the workmen employed in the mines, but also of the travelling public who pass over their line.

No. 26 was of a very simple nature, and was brought about solely through the rashness of the sufferer. A water wheel which worked the machinery at which he was dressing slates had become fixed by ice, and being impatient to begin to work he jumped on the top of the wheel, and without taking any precautions for his own safety, began to remove the ice. While he was thus engaged, the wheel, impelled by his weight, turned so rapidly round that he could not get off, and he was crushed so severely against the end of the trough that he died the following day. This is the third accident of this nature which has occurred during my inspectorship.

I have to record the death of a child of ten years of age who fell down an abandoned shaft at the Minera Mine. He and several little companions were playing near the mouth of the shaft, when the deceased in a childish freak climbed over the fencing and fell in. The shaft was duly fenced round.

NON-FATAL ACCIDENTS.

The notices of non-fatal accidents numbered 84, and may be thus classified:

Falls of ground	25
Ropes and chains breaking	1
Whilst ascending and descending by machinery	3
Things falling from surface	1
Falling from part way down	7
Things falling from part way down	1
Explosions of gunpowder, &c.	17
By machinery underground	6
Sundries underground	12
By machinery on surface	3
Sundries on surface	8
	84

Of these a large number caused injuries of a very trifling nature.

The classes of accidents which contributed most to the list are the "Falls of ground" and

"Explosions of gunpowder, &c." The remarks made upon the fatal accidents from these causes apply equally here. But with respect to the explosions of gunpowder, &c., I have to observe in addition, that several accidents took place through wanton carelessness. I had occasion to make the same remark last year, and although I perfectly agree with the observation made by my colleague, Dr. C. Le Neve Foster, in his last report, that the number of accidents from blasting is not very excessive if we consider how many holes are fired every day, I have a strong belief that if mine agents had taken greater pains during last year to impress upon their workmen the importance of observing the precautions demanded by the Act, and the directions given for the treatment of dynamite, the injuries and deaths from this cause would have been far fewer.

Prosecutions.

The prosecutions instituted by me during the year were as follows:

1. Mr. James Anderson, of the Vaynol Mine, who was fined in the following amounts: 5*s*. for not publishing the Abstract of the Act, and 40*s*. and 20*s*. for not sending me the statutory notices of two accidents which had happened in his mine.

2. Mr. David Lloyd, of the Llandudno Copper Mine, who was fined 10*l*. for not fencing an abandoned shaft. I had repeatedly written to Mr. Lloyd, and told him verbally, that several of his shafts required fencing, and received a letter from him assuring me that the work had been done; but having afterwards received intimation that a visitor to Llandudno had received serious injury through falling into an abandoned shaft, I visited the place, and found that no fencing had been done at that part of the mine. I therefore instituted these proceedings against the owner.

3. The Lords of Mold, for not fencing an abandoned shaft on their mineral property. This case was dismissed by the Justices. The agents to the defendants, whose attention I had twice called to the danger of the shaft in question, stated before the magistrates that the mine in which the shaft lay was still in the occupation of a mining company then in liquidation, and their attorney argued that the company alone, or its liquidators, were responsible for the fencing of the shafts. After much argument, the Justices decided on adjourning the case to the following petty sessions, so as to enable them to obtain counsel's opinion upon the point. Their decision having been announced, I acted upon your instructions previously obtained, and requested a case for trial in the Court of Queen's Bench. I am not at present able to say when it will come on.

Until this case was brought before the Justices, I had always construed the words "and every other person interested in the minerals of the mine," as meaning, *inter alia*, the owner of the mineral property. If it is ruled otherwise in this case, it will greatly increase the difficulties of inspectors in dealing with a matter which is a ceaseless source of work in travelling and correspondence.

The Justices before whom this case was brought expressed themselves as being anxious that the responsibility of fencing these shafts should be brought home to the proper parties, and, during the hearing, the chairman observed that his own brother had, while out shooting, received very serious injuries through falling into the very shaft which formed the subject of the action.

Special Rules.

The only special rules I have signed during the year are those established by Messrs. Wass and Son for their numerous lead mines in the county of Derby. I received a complaint from Messrs. Wass that General Rule 2 (*d*), which, except in the case of mines excepted from the operation of that section by the Secretary of State, prohibits the use of an iron pricker, caused them much needless trouble and inconvenience. The complaint was accompanied by a request that I would obtain for them the exemption you have the power of granting.

I gave the matter very careful consideration, and after many inquiries made among the mines, felt justified in advising you to give the required exemption, on the condition that Messrs. Wass would establish special rules providing, among other matters, that no charge of powder should be inserted into a hole for blasting, except in a paper bag. This condition was agreed to, and the following code of rules established:—

THE METALLIFEROUS MINES REGULATION ACT, 1872.

(35 & 36 Vic. c. 77.)

Special Rules for the Conduct and Guidance of the Persons employed in the Management and of all Persons employed in or about the Mines owned by Wass and Co.

Agent.

1. The Agent has the supervision of this mine. It is his duty to comply with the requirements of "The Metalliferous Mines Regulation Act, 1872," and to do his utmost to enforce, in and about this mine under his charge, the observance of the Act (which includes the General Rules), and of these Special Rules.

2. And he shall appoint, where in his judgment it may be necessary, a Deputy Agent, or such other competent persons as may be necessary to carry out the provisions of the said Act; and he shall inform each of them whether the whole, and if not the whole, what District or Districts of the mine, is or are under his charge.

3. He shall report in writing to his principal or principals when anything is required that is not within the scope of his authority to order, so as to enable him to carry out the Act.

Under Agents and other responsible Persons.

4. The Agent or Under Agent and all other responsible persons shall, so far as is reasonably practicable, observe and endeavour to enforce such portions of the Act and of such of the following Special Rules as refer to his or their several duties.

Ventilation.

5. The Agent or Under Agent shall see that a proper amount of ventilation is constantly produced in every working place, and in every part of the mine ordinarily frequented by the workpeople. And any workman suffering from a deficiency in the ventilation of his working place shall make a complaint to the Agent or Under Agent.

Gunpowder and Blasting.—General Rule No. 2.

6. In charging holes for blasting, Gunpowder shall not on any account be used, except in the form of a cartridge.

Fencing of old Shafts.—General Rule No. 6.

Fencing of Entrances to Shafts.—General Rule No. 7.

Securing Shafts.—General Rule No. 8.

7. The Agent or Under Agent shall attend to these Rules.

Securing of Roofs and Sides.

8. The Agent or Under Agent, or other responsible person, shall see that sufficient props and other supports are provided where requisite, safely to secure the roofs and sides of the travelling roads and working places, and he shall order such props to be set or fixed where necessary.

9. Any officer when unable to attend to his duties shall cause his superior officer to be informed thereof in sufficient time to enable him to find a substitute.

Miners and all other Work-persons.

10. All work-persons employed at the mine, whether above ground or below, shall comply with the provisions of "The Metalliferous Mines Regulation Act, 1872," and of the following Special Rules, so far as the same are applicable to an ordinary work-person as distinguished from the Agent, Under Agent, or other officer.

Timbering.

11. Except by special permission, no work-person, when working soft ground, shall allow the forebreast to be more than 4 feet in advance of the timber or props. He is also responsible for the proper timbering of his working or drift. And in all places where the Agent or Under Agent orders special precautions as necessary in order to secure the safety of work-persons, his directions must be carefully obeyed.

Tubs.

12. Each work-person shall satisfy himself of the safety of any tubs, chains, tackle, windlass, ropes, or other appliance he may use, before commencing and whilst at work; and in case of any defect or insecurity, he shall cease to use anything unsafe.

13. Each work-person shall obey the directions of the Agent or Under Agent and all other officers as to work required to be done for safety, and as to all matters relating to the proper discipline of the mine. He shall work only when they permit, and shall not go into any other part of the workings except such as he may necessarily pass through in going to or coming from his work.

To give Information.

14. Every work-person shall give immediate information to the Agent, Under Agent, or other officer, of any unusual quantity of water or of any insecurity of the roof or sides or other part of the workings, or of the shafts, stemples, ladders, or stages; or of any breach of the Act, or of these rules, and of any circumstance likely to produce danger.

Boilers.

15. The engineman or stoker shall not exceed the allowed pressure of steam, and shall maintain a proper depth of water in each boiler; and if anything should happen to prevent this, he shall immediateiy damp or draw the fire, and report it to the Under Agent, Agent, or superior officer.

Machinery.

16. The Engineman, or some other responsible person to be appointed for that purpose by the Agent, shall daily examine the state of the engine, machinery, ropes, boilers, fittings, and external parts of the machinery, and shall see that the same are kept in good order, and that all exposed or dangerous parts of the machinery are kept properly fenced. He, or such other person appointed as aforesaid (if any), shall report any defect to the Agent or Under Agent as soon as possible, and if anything dangerous shall be discovered the engineman shall not work the engine until the necessary repairs be executed.

ADDITIONAL SPECIAL RULE FOR SINKERS.

17. In sinking pits, the persons in charge on the surface and at the bottom of the shaft shall see that the bucket or tub is steadied before leaving the top or bottom of the shaft, and that all brick or other small material to be sent up or down is below the level of the top of the bucket or tub, and that there is no stone or loose material sticking to the bottom before it is sent away. All tools or timber shall be safely secured when being sent up or down the shaft.

Name of the Mine _____

Name of the Agent _____

Name and Address of the Inspector of Mines of the District. } T. F. EVANS, Mona Lodge, Amlwch, Anglesey.

Take notice, that any objection to the foregoing Special Rules for the said mine, on the ground of anything contained therein or omitted therefrom, may be sent by any of the persons employed in the said mine to the Inspector of the district at the address above stated; and that the said Rules will remain posted up for not less than two weeks before the same are transmitted to the Inspector, within which time the objection (if any) must be made.

Dated this of 1875.

I, the undersigned person sending to the Inspector of the District the foregoing Rules, do hereby certify that the same and the above notice at the end thereof have been posted up in a conspicuous place at the said mine during two entire weeks before the now sending thereof as aforesaid.

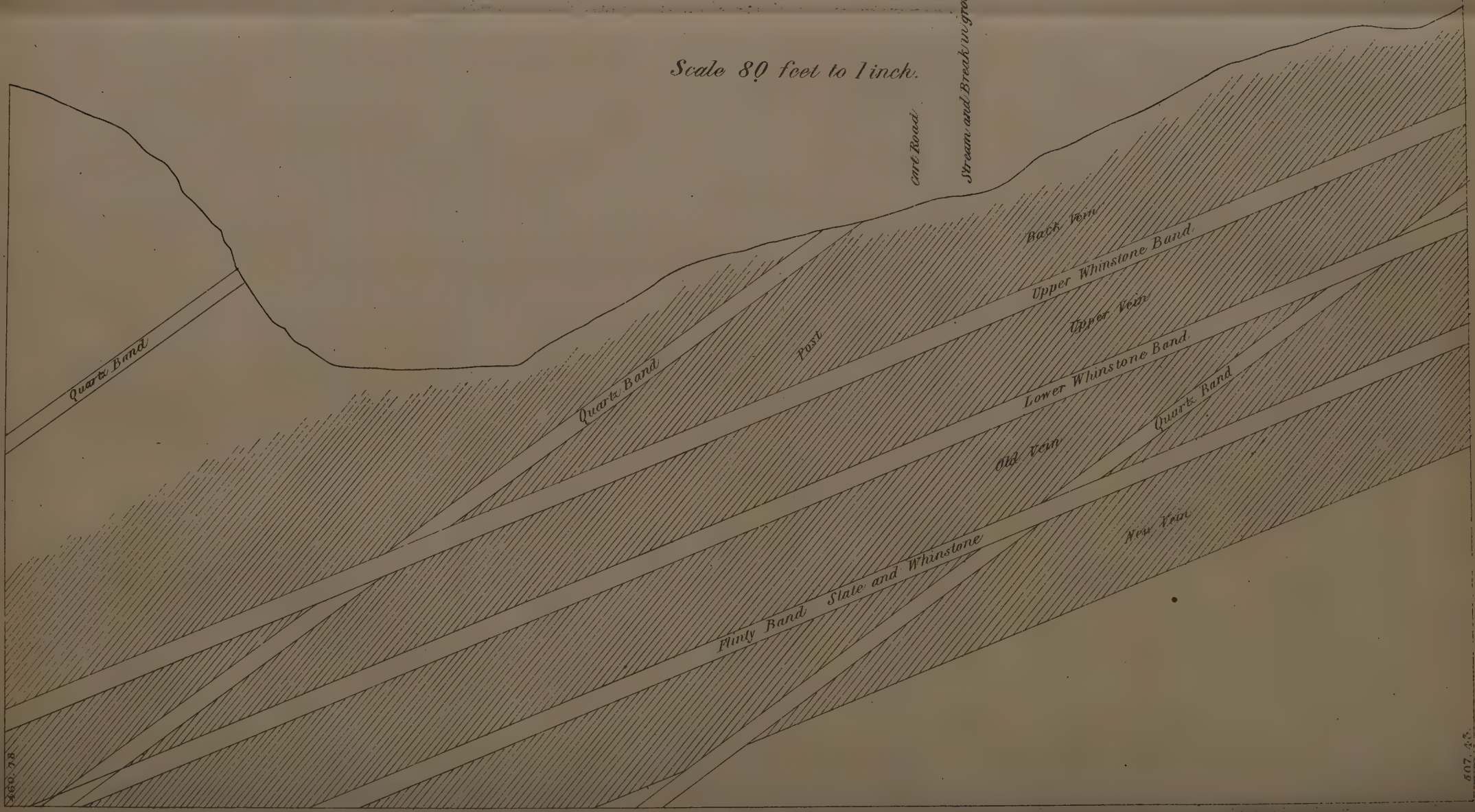
_____ Agent.

For Mr T. F. Evans' Report.

MAEN OFFEREN SLATE QUARRY.

SECTION ACROSS PART OF LOWER WORKS.

Scale 80 feet to 1 inch.



THE YEAR'S GENERAL RESULTS.

Accidents and Persons employed.

In the Reports made for previous years the lateness of the date of which the anual returns were due from the mines under the principal Acts precluded a comparison between the number of persons employed and the fatal accidents during the same year. The comparison made in my Report for 1874 was, therefore, of necessity between the deaths during that year and the persons employed during 1873.

Now that all the statistics for 1874 are available, I deem it advisable to place on record the proportion of deaths to the persons employed as ascertained from the corrected data.

Taking underground and surface, there was one death in every 517 persons employed, and distinguishing between the underground and surface hands, we have one death for every 405 working below ground, and 1 in every 1,076 employed on the surface.

Instituting a similar comparison for the year 1875, the following results are obtained:

Among all the hands employed, 1 in 392 was killed, and, distinguishing between the underground and surface, we have, respectively, 1 in 281 and 1 in 806. This shows a much higher rate of deaths in proportion to the persons employed than that obtained for 1874; but the reference made in my Report for the latter year to the great number of fatal accidents in the slate mines, now for the first time appearing in my list, will serve in a great measure to explain the apparent increase.

The number of men employed underground at these mines during 1875 was 1,887, of whom eight were killed, making 1 in 236; while of those employed on the surface, numbering 2,430, no less than five met with accidental deaths, making 1 in 486. The general average of the slate mines gives 1 in 332.

Treating the metal mines similarly, we find that of all hands working below and above ground, 1 in 432 was accidentally killed; and separating underground from surface, we have for the former 1 in 302, and for the latter 1 in 1,605. This does not show so good a result as the year 1874, but I account for this by the absence from my present list of some of the great mines of the north of England, noticed in my last report as rarely having an accident of any kind although employing large numbers of miners.

The number of persons employed in those counties which now constitute my district was 12,796 during the year 1874, and 12,960 during the year 1875.

The quantities of mineral returned for the last four years are as follows:—

	1872.	1873.	1874.	1875.
	Tons.	Tons.	Tons.	Tons.
Barytes	6,957	4,644	3,941	5,796
Bluestone	984	734	1,008	650
Chert	—	—	—	3,710
Chloride of barium	65	—	—	—
Copper ore	7,334	4,693	4,474	4,239
Dross spar	—	14	25	34
			Oz. dwts. grs.	
Gold	—	—	385 0 12	—
Gold quartz	—	—	—	122
Auriferous sulphurets	—	—	—	10
Iron ore	4,852	8,374	3,122	2,267
Iron pyrites	2,597	2,512	2,470	1,860
Lead ore	37,639	33,923	34,876	34,617
Limestone	—	—	—	12,500
Manganese	50	—	40	—
Ochre and umber	3,090	2,450	3,012	3,955
Phosphate of lime	—	—	479	122
Sand	—	867	—	272
Slates	—	—	151,744	149,565
Zinc ore	13,690	10,083	16,177	17,816

REMARKS UPON THE SLATE MINES.

Although some months have now elapsed since the slate mines have been proved to be under the Act, I have not, owing to the pressure of other official duties, as yet been able to proceed beyond a preliminary inquiry into their condition as regards the provisions which may have been made for the health and safety of the men they employ.

The accompanying section, obligingly supplied me by Mr. Brunton, the General Superintendent of the Maenofferen Mine, may be taken as a fair example of the slate mines wrought in the neighbourhood of Festiniog. The beds marked veins consist of the slate which the mine produces, and the narrow bands which interlie them, termed whinstone in this section, are beds varying considerably in thickness, generally, if not always, composed of rocks of extreme hardness, which form the hanging wall or roof of the excavations formed in working away the slate.

For many years these veins of slate were worked at the outcrop only by ordinary daylight quarrying operations, but the excavations thus made became so deep that the overhanging rock would often fall in, causing danger to the hands employed, and much loss to the proprietors through suspension of the operations and the expense incurred in clearing away the fallen waste.

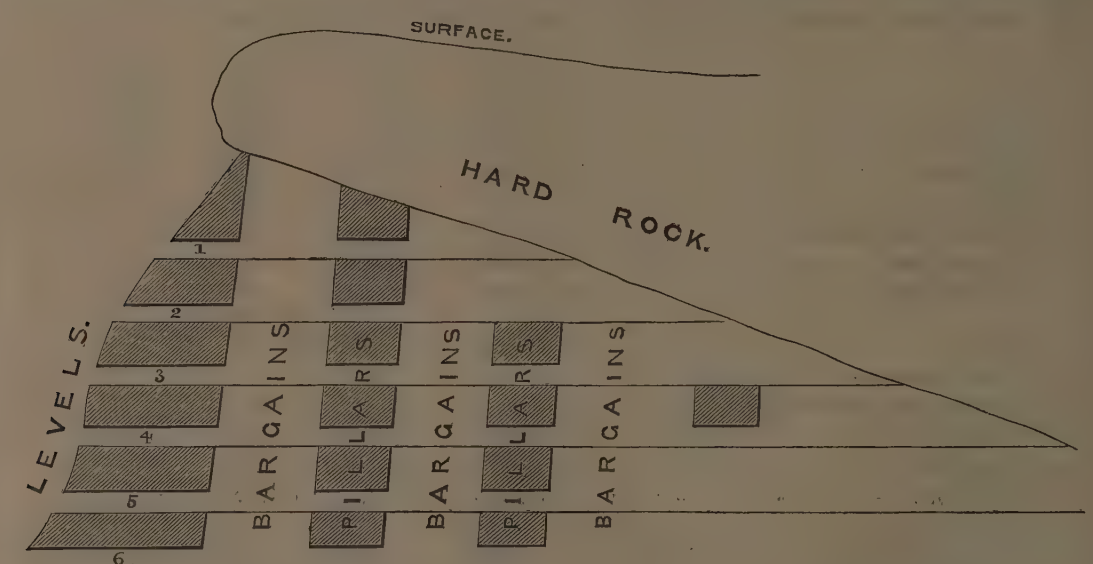
This rendered imperative the adoption of a system of underground mining which would both secure the roof and so lay open the veins that they might be worked away with as little loss as possible from the smashing of valuable slate, and in the arrangement of pillars for the support of the superincumbent rock. In order to accomplish this, levels are driven at different depths immediately under the hard bands of rock which lie upon the slate vein, and openings termed "chambers" are made from level to level upon the mineral to be wrought. The longitudinal extent of these chambers varies considerably, the nature of the roof and the thickness and inclination of the beds being usually considered when the sizes of the chambers and the supporting pillars are determined.

The chambers being opened, skilled workmen, locally known as "rockmen," begin to work upon the slate, and remove it in slabs of various sizes by the process of blasting.

The space allotted to one partnership of rockmen extends from pillar to pillar and from level to level, and is styled a bargain, a term apparently obtained from metalliferous mines.

Where the configuration of the ground allows it, the levels are driven from the side of the hill upon the course of the vein, and become the natural outlet for the water and the mineral wrought; but where this mode of working is not practicable the water has to be pumped, and the mineral raised by means of water or steam power through the chambers or through shafts sunk for the special purpose.

This sketch, made with the consent of the agent from the sectional plan of a slate mine near Corris, gives some idea of the disposition of the pillars and chambers in that mine.



In making certain inquiries concerning these mines, which I intend to prosecute further as other engagements allow, I have obtained from the Registrar for the sub-district of Festiniog a list of the males above the age of 10 who died during the year, in which the ages, occupations and causes of death are stated. I deem it advisable to publish it in my present Report. There is every reason to suppose that the year 1875 furnishes a fair example of what has being going on during any year for the last ten or twelve years, except that when typhoid fever has occasionally been raging the death rate must have been much higher. Any deductions made from this list may, therefore, be accepted as legitimate, and any conclusions derived from it as to the general condition of the slate miners may, without doubt, be regarded as reliable.

When Died.	Name.	Age.	Occupation.	Cause of Death.
5 January	Walter Davies	63	Draper	Epilepsy.
9 „	Thomas Roberts	62	Labourer	Bleeding piles.
18 „	Joseph Griffith	62	Tailor	Bronchitis.
19 „	William Morris	59	Slate quarrier	Disease of kidneys.
19 „	Ellis Roberts	23	Railway porter	Typhoid fever.
10 „	Morris Williams	24	Labourer	Drowned.
22 „	Morris Griffith	90	Farmer	Bronchitis.
25 „	William Griffith	57	Slate quarrier	Pneumonia.
6 February	John Griffith	26	Joiner	Consumption.
7 „	David Parry	56	Slate miner	Pneumonia.
17 „	David Davies	40	Slate labourer	Do.
2 March	John Roberts	83	Gamekeeper	Bronchitis.
4 „	David Thomas	24	Quarryman	Phthisis.
15 „	William Roberts	22	Do.	Congestion of lungs.
21 „	Meredith Williams	77	Farmer	Abscesses.
25 „	Robert Jones	51	Slate miner	Obscure malignant.
28 „	Owen Barlwyd Jones	53	Quarryman	Encephalitis.
30 „	David Owen	48	Butcher and farmer	Rheumatic fever.
6 April	Hugh Griffith	34	Quarryman	Phthisis.
3 „	John Humphreys	36	Do.	Scrofula.
4 „	Thomas Baskerville	71	Labourer	Chronic peritontis.
13 „	Rowland Jones	56	Slate miner	Pneumonia.
18 „	John Richard Williams	58	Quarryman	Bronchitis.
27 „	Robert Hughes	20	Engine stoker	Killed by a fall of rubbish.
27 „	William Roberts	32	Timekeeper	Do. do.
28 „	William Hughes	31	Slate miner	Do. do.
3 May	John Williams	80	Wool carder	Softening of brain.
16 „	John H. Williams	40	Slate miner	Affection of lungs.
24 „	Evan Evans	45	Labourer	Killed by a fall.
27 „	Robert Owen	27	Rockman	Killed by a blast.
1 June	David Hughes	30	Do.	Killed by falling.
11 „	Owen Jones	62	Labourer	Scarlet fever.
14 „	Morris Thomas	20	Slate miner	Phthisis.
24 „	Thomas Thomas	38	Do.	Disease of kidneys.
1 July	Griffith Humphreys	89	Labourer	Old age—debility.
13 „	Robert Anwyl	88	Farmer	Do. do.
26 „	Edward Jones	84	Formerly a farmer	Hemiplegia.
18 „	Morris Davies	49	Slate labourer	Injury to brain.
31 „	John Edwards	35	Slate miner	Apoplexy.
6 August	William Richards	17	Farm servant	Consumption.
3 September	Evan Jones	39	Slate labourer	Aneurism in chest.
5 „	John Morgan	87	Formerly farmer	Bronchitis.
6 „	Evan Roberts	87	Shoemaker	Hemiplegia.
9 „	Hugh Jones	76	Farmer	Cancer of the mouth.
19 „	Robert Williams	32	Slate miner	Pericarditis.
3 October	John Jones	36	Do.	Syphilitic caries of skull.
29 September	David Jones	38	Do.	Typhoid fever.
7 October	Robert Evans	43	Do.	Phthisis.
22 „	John Hughes	23	Slate quarrier	Typhoid fever.
26 „	Morris Jones	81	Victualler	Softening of brain.
29 „	Evan Williams	78	Mason	Disease of heart, &c.
4 November	William Hughes	69	Slate quarrier	Bronchitis, asthma.
12 „	David Roberts	35	Engine driver	Aneurism of aorta.
26 „	David Stoddart	20	Slate miner	Typhoid fever.
28 „	Robert Evans	64	Farmer	Pneumonia.
7 December	John Owen	25	Slate miner	Typhoid fever.
5 „	Hugh Jones	89	Farmer	Old age—debility.
17 November	Owen Owens	22	Quarry labourer	Killed accidentally.
8 December	William Roberts	60	Slate miner	Bronchitis.
13 „	Lewis Jones	22	Slate quarrier	Phthisis.
7 „	Edward Roberts	21	Quarryman	Crushed by a water wheel.

It tells us the following facts:

The average age of the males who died in the sub-district during the year was - - - - - - - - 49·32 years.

The average age at death of the males not employed at the slate mines was - - - - - - - - 67·12 years.

The average age at death of the males employed at the slate mines was - - - - - - - - 37·78 years.

Thus proving apparently that the workman in the slate mines sacrifices 29·34 years of his life in obtaining a higher rate of wages than the neighbouring agricultural labourer.

The deplorable revelation thus made leads one naturally to inquire how it is that a class of workmen who receive a pay high enough to secure them every domestic comfort and all

the necessaries of health in their homes, whose habits are generally temperate, and whose leisure is principally spent in religious exercises and the cultivation of literature and music, should be cut off at an age which to a stranger would probably indicate either miserable destitution or habits of irregularity and excess.

To judge from the appearance of those slate mines which I have inspected, I should have supposed these workings to be far healthier than ordinary metalliferous mines, and with proper care equally safe; but a comparison of the ages given in this list with those of miners in the various parishes of Cornwall, as supplied by the Report of the Commissioners appointed to inquire into the condition of the mines of Great Britain, made in 1864, proves that in the years 1859–1861 the average age at death of Cornish miners was very considerably greater than that of the slate miners of Festiniog in 1875.

An analysis of this list shows that the slate workers who died during the year numbered 35, and that the causes of death may be thus classified:

Accidents	9
Typhoid and other fevers	4
Lung diseases	14
Diseases of the kidneys	2
Diseases of the heart and its appendages	2
Various complaints of an adventitious character	4
	35

The accidents form a high per-centage among the causes of death, but on omitting these and calculating the average age of those who died from disease the result differs but little, giving us only 40·8 years. At the present moment it would, for various reasons, be premature to state an opinion as to the extent to which these accidents are preventable, especially as I hope shortly to lay before you a full special report bearing directly upon the question.

It will not perhaps be an easy matter to determine how far the nature of the employment is the cause of the feebleness of constitution indicated by the number of deaths from disease.

There are other dire causes in operation. The dwellings are overcrowded and badly ventilated, and the sleeping accommodation has been so deficient that instances have been common of the same beds having been slept in night and day without intermission by successive occupants. Rent is consequently high, and a cottage is often let in portions to several families, who each pay for their rooms as much as would secure them a neat cottage and good garden in many parts of the principality. The villages in which the miners live are in a filthy state, and the water used is not fit for culinary purposes. These conditions bring about the invariable result. Typhoid and other fevers are always present, and occasionally break out with extreme virulence.

The wives lack thrift, know nothing of cooking, and spend a large proportion of their husbands' earnings in the purchase of gaudy finery, for which they are seldom free from debt. The men therefore fare badly. Their food is almost entirely tea, coffee, and bread and butter,—the butter being commonly of shocking quality,—and their homes are as comfortless as slovenliness can make them.

It may be said that these hygienic and domestic deficiencies are matters which lie beyond my province, but I think it advisable to place on record observations made in this populous district during my official visits, which may in the future prove useful in explaining phenomena in the miners' condition which cannot be attributed to any causes inherent to their occupation.

But whether the physical degeneracy of these men arises chiefly from the nature of their work or from domestic misery, sentiments of common humanity should long ago have awakened in the proprietors of these mines a desire to improve the condition and secure the health of those men whose labour and intelligent skill literally convert their great slate masses into mountains of wealth. With one exception, I have not learnt that any attempt has been made in this direction. The exception referred to deserves the highest commendation. At the mine owned by Mr. Percival, known locally as the Votty and Bowydd, I found fine rooms and all the requisites for providing a large number of persons with good and comfortable meals, and noticed some useful books lying upon the shelves and tables. In reply to my inquiries the agent explained to me that Mrs. Percival had built the rooms and kitchens for the purpose of supplying the men with good substantial dinners at the lowest price possible, and secured the efficiency of the establishment by her own constant supervision. This lady evidently saw that the men were suffering from want of good wholesome diet, and her philanthropy suggested the only remedy which she individually could provide.

There is one matter, having reference to the general management of mines, to which I wish to refer before closing my report. It is too common a practice to entrust the charge of many

mines to the same man. He pays them periodical visits, writes his reports, and considers his duty performed. This mode of conducting mining operations is utterly inconsistent with that careful attention to every matter of detail which tends to the success of a mine and enhances the safety of the miners employed. From the difficulty I sometimes experience in finding the responsible agent, it is manifest that an idea prevails that a mine is able to manage itself. No delusion could be more mischievous. Every mine of any pretensions to importance requires the daily presence of an experienced and skilful agent. A mine captain can no more do justice to eight or ten mines than a sea captain can navigate eight or ten ships at one time. His whole time and attention ought therefore to be devoted to his one mine.

Mine agents are not themselves responsible for this evil; it is the creation of mining companies and mine-owners, who, as a rule, compel their agents to pick any trifling help to a decent livelihood that chance may present, by paying them a rate of salary that would be ridiculed by an English mechanic of average ability. Expedients are thus forced upon them too which seriously damage the interests of the mine-owners and subvert that influence over the men without which proper order and discipline cannot be maintained. It cannot be too forcibly impressed upon mining companies that if a mine deserves being worked it deserves a well-paid agent, and I would suggest to investors in metalliferous mines that those mines should ever obtain their preference which have a competent agent, whose honest and anxious performance of his own duties is secured by a salary sufficient to support him with comfort in the social status to which he is entitled.

It may be well here to state that I had the honour during the year to receive your directions to place myself at the service of the Board of Trade, and to act upon their instructions. The Board requested me to examine certain mine workings which extended under a passenger-carrying line of railway, and to give my opinion as to the amount of danger and the best manner of avoiding risk. I reported accordingly, and received a letter from the Board thanking me for my services.

I have, &c.
T. F. EVANS,
H.M. Inspector of Metalliferous Mines.

To the Right Hon. R. A. Cross, M.P.,
H.M. Principal Secretary of State for the Home Department, Whitehall,
London, S.W.

NUMBER of PERSONS employed in or about the MINES in MR. T. F. EVANS' District, and QUANTITY of MINERAL raised or sold in the Year 1874.

Counties.	Underground. Male Persons Ages. 12 to 13.	13 to 16.	Above 16.	Total.	Above Ground. Ages, 8 to 13. Males.	Females.	Ages, 13 to 18. Males.	Females.	Ages above 18. Females.	Males.	Total.	Total number of Persons employed Above and Underground.	Barytes.	Copper Ore.	Iron Ore.	Iron Pyrites. (*Mundic.*)	Lead Ore.	Zinc Ore.	Other Minerals.	Remarks.
													Tons. cwts.	Tons.	Tons.	Tons. cwts.	Tons. cwts.	Tons. cwts.		
Anglesey	—	2	124	126	8	—	17	14	4	91	134	260	—	4,129	—	652 9	—	—	Tons. Blue stone 1,008	
Brecknockshire	—	—	4	4	—	—	2	—	—	—	2	6	—	—	—	—	9 6	—	Ochre 2,952	
Cardiganshire	—	11	1,041	1,052	36	12	173	134	141	231	727	1,779	—	69	—	—	5,163 1	297 7	Manganese 40	
Carnarvonshire	3	12	242	257	24	—	40	5	—	87	156	413	—	140	—	1,818 0	1,126 2	353 5	Ochre 60	
Cumberland	4	7	585	596	21	—	125	—	—	138	284	880	572 13	813	—	—	2,312 11	444 8	—	
Denbighshire	—	—	343	343	19	—	23	—	—	101	143	486	—	—	—	—	2,863 14	1,549 0	—	
Derbyshire	—	5	264	249	3	—	50	1	—	60	114	383	2 10	—	—	—	3,080 15	—	—	
Durham	3	9	684	696	50	—	209	—	—	194	453	1,149	—	—	—	—	7,823 0	—	—	
Flintshire	—	4	677	681	20	—	58	—	4	142	224	905	—	—	—	—	2,806 7	1,886 18	—	
Lancashire	—	7	98	105	24	—	15	—	—	24	63	168	—	93	—	—	—	—	ozs. dwts. grs. Gold 385 0 12	
Merionethshire	1	—	112	113	2	—	21	—	—	65	88	201	—	5	—	—	58 0	18 18	Tons. cwts.	
Montgomeryshire	—	11	764	775	6	3	98	18	75	381	581	1,356	19 15	64	—	—	7,564 10	2,621 15	Phosphate of Lime 479 0	
Northumberland	—	20	1,079	1,099	58	—	230	—	—	291	579	1,678	6,802 0	—	—	—	11,514 8 (containing 41,846oz. silver).		Whinstone 1,351 0	
Radnorshire	—	—	12	12	1	—	—	1	1	3	6	18	—	—	—	—	34 12	72 18		
Shropshire	—	11	729	740	59	—	117	13	18	275	482	1,222	4,119 13	—	—	—	7,773 9	550 0	Dross Spar 25 10	
Westmorland	—	—	165	165	1	—	50	—	—	75	126	291	—	—	—	—	1,372 3	—		
Isle of Man	—	9	858	867	37	—	142	—	15	412	606	1,473	—	66	287	—	4,292 19	9,827 10		
IRON ORE MINES.																				
Cumberland	7	199	4,011	4,217	30	—	125	—	1	1,189	1,345	5,562	—	—	1,130,201	—	—	—		
Denbighshire	—	—	30	30	—	—	1	—	—	4	5	35	—	—	2,053	—	—	—		
Durham	—	5	190	195	2	—	12	—	—	15	29	224	—	—	45,317	—	103 7	—		
Flintshire	—	1	18	19	—	—	1	—	—	3	4	23	—	—	1,069	—	—	—		
Lancashire	2	—	1,822	1,824	9	—	181	—	1	1,184	1,375	3,199	—	—	764,144	—	—	—		
Westmorland	—	—	9	9	—	—	—	—	—	4	4	13	—	—	504	—	—	—		
	20	313	13,861	14,194	410	15	1,690	186	260	4,969	7,530	21,724	11,516 0	6,217	1,943,575	2,470 9	57,898 4	17,621 19		
SLATE MINES.													Slates and Slabs.							
													Tons. cwts.							
Carnarvonshire	—	—	17	17	—	—	9	—	—	69	78	95	1,770 16							
Merionethshire	—	5	1,786	1,791	22	—	286	—	—	2,042	2,350	4,141	149,974 3							
	—	5	1,803	1,808	22	—	295	—	—	2,111	2,428	4,236	151,744 19							

NUMBER of PERSONS employed in or about the MINES in MR. T. F. EVANS' District, and QUANTITY of MINERAL DRESSED, and of UNDRESSED MINERAL sold, treated, or used in the Year 1875.

Counties.	Underground. Male Persons Ages. 12 to 13.	13 to 16.	Above 16.	Total.	Above Ground. Ages, 8 to 13. Males.	Females.	Ages, 13 to 18. Males.	Females.	Ages, above 18. Females.	Males.	Total.	Total number of Persons employed Above and Underground.	Barytes.	Copper Ore.	Iron Ore.	Iron Pyrites. (*Mundic.*)	Lead Ore.	Zinc Ore.	Other Minerals.	Remarks.
													Tons.	Tons. Cwt.	Tons.	Tons.	Tons. cwt.	Tons. cwt.		
Anglesey	—	3	146	149	5	8	27	16	20	107	183	332	—	3,961 4	—	651	—	—	Blue Stone 650 Ochre 3,935	
Brecknockshire	—	—	4	4	—	—	1	—	—	1	2	6	—	—	—	—	11 0	—	—	
Cardiganshire	1	12	1,012	1,025	26	8	204	130	134	212	714	1,739	—	79 5	—	—	5,541 2	8 4	—	
Carnarvonshire	2	15	248	265	25	—	57	6	—	77	165	430	—	127 0	—	1,180	1,406 12	404 0	Fire Sand 272	
Denbighshire	—	—	388	388	11	—	33	—	—	130	174	562	—	—	—	—	2,595 10	1,883 0	Limestone 800	
Derbyshire	1	6	228	235	2	—	33	—	5	31	71	306	680	—	—	—	1,270 11	—	Limestone 20 Chert 3,710	(Black.)
Flintshire	—	9	750	759	14	—	57	—	1	170	244	1,003	84	—	—	—	2,687 7	1,944 1	—	
Merionethshire	—	—	95	95	—	—	21	—	—	52	73	168	—	16 9	—	29	155 0	—	Gold Quartz 122 Sulphurets 10	(Auriferous.)
Montgomeryshire	2	10	799	811	7	2	73	13	58	378	531	1,342	605	55 5	—	—	8,626 4	2,326 6	Phosphate of Lime 122	
Radnorshire	—	—	23	23	—	—	—	—	2	2	4	27	—	—	—	—	56 0	45 0	—	
Shropshire	1	10	763	774	18	—	137	9	18	312	494	1,268	4,427	—	—	—	7,999 19	811 12	Dross Spar 35 Limestone 11,680	Used for walks.
Isle of Man	—	10	882	892	22	—	134	—	12	384	552	1,444	—	—	—	—	4,268 8	10,394 0	—	
IRON ORE MINES.																				
Denbighshire	—	—	11	11	—	—	1	—	—	2	3	14	—	—	2,242	—	—	—	—	
Flintshire	—	—	2	2	—	—	—	—	—	—	—	2	—	—	25	—	—	—	—	
SLATE MINES.																				
Carnarvonshire	—	—	54	54	—	—	22	—	—	174	196	250	—	—	—	—	—	—	Slates 3,839	Tons. =149,565
Denbighshire	—	—	8	8	—	—	—	—	—	32	32	40	—	—	—	—	—	—	—	
Merionethshire	—	8	1,817	1,825	14	—	209	5	—	1,974	2,202	4,027	—	—	—	—	—	—	Do. 145,726	
	7	83	7,230	7,320	146	18	1,009	179	250	4,038	5,640	12,960	5,796	4,239 3	2,267	1,860	34,617 13	17,816 3		

MINES CLASSED UNDER THE METALLIFEROUS MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and LOSS of LIFE arising therefrom, in Mr. T. F. EVANS' DISTRICT, comprising Anglesey, Brecon, Cardiganshire, Carnarvonshire, Denbighshire, Derbyshire, Flint, Merionethshire, Montgomeryshire, Radnorshire, Shropshire, and the Isle of Man, during the Year 1875.

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
1875. Feb. 2	1	Roman Gravels	Shropshire -	Roman Gravels Mine Co.-	Samuel Davies -	Miner -	44	It is supposed that a piece of timber which had been placed for the purpose of supporting a large quantity of rubbish slipped at one end while the deceased was standing under it and thus caused him to be crushed to death - - - -	–	1	–	–	–
„ 5	2	Park - -	Denbighshire -	Park Mining Co. - -	John Oldfield -	Ditto -	58	A fall of four or five yards. There was no evidence as to the cause of his falling, but the general opinion seemed to be that the deceased lost his light while leaving his work and made a false step while groping in the dark -	–	–	–	1	–
„ 8	3	Mill Dam -	Derbyshire -	Mill Dam Mining Co. -	Thomas Bagshaw -	Ditto -	54	The breaking of a piece of timber, causing him to be at once crushed to death by a quantity of waste which had been stowed in some old workings above him - - - - -	–	1	–	–	–
„ 18	4	Willoughby -	Carnarvonshire -	Willoughby Mining Co. -	Robert Roberts -	Ore Dresser	10	This little fellow was employed feeding an ore crusher, and while so engaged put his foot between the rolls, which mutilated him so severely that he died in a few minutes - - - -	–	–	–	–	1
„ 26	5	Lilleshall Lime-	Shropshire -	Lilleshall Lime Co. -	James Stones -	Miner -	53	The explosion of a charge of gunpowder which the deceased was engaged in ramming. His comrade stated in evidence that two lots of ramming had been used before the iron stemmer had been applied - - - -	–	–	–	1	–

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
1875.													
March 8	6	Great Laxey -	Isle of Man -	Great Laxey Mine Co. -	John Quine -	Miner -	57	A piece of timber, which was being handed down to him by his own son and another man, was carelessly allowed to fall down upon him, fracturing the skull and causing immediate death -	–	–	–	1	–
„ 19	7	Rhiwbryfdir -	Merionethshire -	Rhiwbryfdir Slate Co. -	John Jones - -	Slate Miner-	—	A fall of stones upon him in his working place - - - - -	–	1	–	–	1
„ 29	8	Moorhigh -	Derbyshire -	Wass and Son - -	Benjamin Sellars -	Miner -	33	The explosion of a charge of powder which he was ramming in a hole which had been previously fired, but had failed in its intended effect -	–	–	–	1	–
April 29	9	Welsh Slate -	Merionethshire -	Welsh Slate Co. -	William Roberts -	Timekeeper	32	These men were working on the surface and were supposed to be in a place of perfect safety, but an enormous mass of overhanging rock suddenly gave way, crushing the poor men to pieces and causing the destruction of much valuable machinery - - -	–	–	–	–	3
					Robert Hughes -	Engine Stoker	20						
					William Hughes -	Slate Miner-	31						
May 21	10	Snailbeach -	Shropshire -	Snailbeach Mining Co. -	William Blackmore	Pitman -	36	The deceased men were engaged repairing some of the timber-work of a shaft. The capstan-rope by which they were suspended in the shaft gave way at the coupling, thus precipitating the cage in which they were working to the bottom of the shaft, a vertical depth of 150 yards. The rope was evidently defective at the part that broke, and had been in use too long a time, but its defective condition had not apparently been noticed by the deceased man Edwards, whose duty it was stated to have been to examine it before putting it to any work - -	–	–	2	–	–
					Samuel Edwards -	Ditto -	46						

LIST OF FATAL ACCIDENTS—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosion of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
1875.													
May 27	11	Cwmorthin	Merionethshire	Cwmorthin Slate Co.	Evan Evans	Labourer	45	A fall over a precipice	–	–	–	1	–
„ „	12	Rhiwbryfdir	Do.	Rhiwbrfydir Slate Co.	Robert Owen	Slate Miner	27	The explosion of a charge of powder	–	–	–	1	–
June 5	13	Welsh Slate	Do.	Welsh Slate Co.	David Hughes	Ditto	30	A fall over a precipice	–	–	–	1	–
„ 7	14	South Roman Gravels.	Shropshire	South Roman Gravels Mining Co.	Edwin Purstow	Watchman	45	The deceased went to his duties while in a state of intoxication, and although told by his fellow-watchman that all was made right below, and that there was no need of his going underground, it is supposed he must have descended as soon as his colleague left the mine. From the position in which the body was found it was concluded that he must have slipped and fallen away from the ladder	–	–	1	–	–
„ 12	15	Ratgoed	Merionethshire	Ratgoed Slate Co.	Rowland Owen	Slate Miner	22	Struck on the head by the handle of a crab-winch. The blow caused instantaneous death	–	–	–	1	–
„ 19	16	Great West Van	Cardiganshire	Great West Van Mining Co.	Lewis Daniel Richard Daniel	Miner Ditto	36 46	The deceased men were setting some pieces of timber in the 34 fathom level, when a large quantity of rock fell down from above, which broke through all the work they had done and crushed them to death. The cause of the fall could not be ascertained	–	2	–	–	–
July 7	17	Ballacorkish	Isle of Man	Ballacorkish Mining Co.	Robert Cornish	Miner	42	A stone fell on his head while he was in the act of filling the kibble. The injury was at first considered of a very slight nature. He was well enough to walk home, and remarked that he could not account for the accident and had no idea where the stone came from	–	–	1	–	–

LIST OF FATAL ACCIDENTS—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosion of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
1875. July 28	18	Plynlimmon -	Cardiganshire -	Plynlimmon Mining Co. -	John Griffith -	Miner -	37	Falling down from his working place to the level below, a distance of 9 or 10 fathoms. It is supposed that when leaving his working place for the purpose of assisting a boy who was coming down from the level above with a chain, he thoughtlessly walked too far forward and stepped into the winze, through which he fell - - - -	–	–	–	1	–
Aug. 28	19	Laxey - -	Isle of Man -	Great Laxey Mining Co. -	Robert Kelly -	Miner -	58	These men were charging or stemming a hole, into which they had put a considerable quantity of powder. They had put in much more than usual, in order to fill a "loch" or natural cavity which the borer hole had entered, and were either putting in more or preparing to stem the charge when by some means unexplained by the evidence the powder exploded, with great violence and killed them both. The appearance of the tools they were using led me to suspect that they were stemming with their iron stemmer when the explosion took place - - -	–	–	–	2	–
					John Kelly - -	Ditto -	36						
Sept. 1	20	Minera - -	Denbighshire -	Minera Mining Co. -	Edward Bluett -	Ditto -	22	Through the breaking of a piece of timber which the deceased and his fellow workmen had recently set. The coroner's jury added as a rider to their verdict of accidental death, that the piece of timber was too long for the weight put upon it, but it did not appear to me when examining the place and the broken timber that anything but a					

LIST OF FATAL ACCIDENTS—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosion of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
1875.								hidden defect could have caused the sudden fracture which resulted in the man's death	–	1	–	–	–
Sept. 15	21	Minera Union	Denbighshire	Union Lead Mining Co.	Thomas Carrington	Miner	48	The deceased and several other miners were re-opening on their own account a shaft which had been abandoned for many years. He was an experienced miner, and was timbering the side of the shaft, the other men assisting him. While thus engaged he trusted his weight to a piece of timber which had formerly been used in securing the side, and which appeared externally to be perfectly sound. It was however so rotten that it broke without the least warning, and caused him to fall to the bottom of the shaft	–	–	1	–	–
„ 16	22	Braich Goch	Merionethshire	Braich Goch Slate Co.	Robert Roberts	Slate Miner	17	Falling from one floor (level) to another. He was following his father, with whom he was working, along a pathway to their working place, but having turned back a few paces to give another workman a light, he inadvertently stepped aside into a precipice which the footpath skirted	–	–	–	1	–
Oct. 15	23	Aberllefenny	Do.	Captain R. D. Pryce	William Davies John Davies	Ditto Ditto	52 24	These men were engaged raising slate on a stope near the edge of an underground shaft by which the slate raised was lowered from their workings to a level 30 yards below them. While they were thus employed the rock on which they stood suddenly slid down into the shaft, carrying them with it					

List of Fatal Accidents—*continued.*

Date.	No. of Accidents.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Occupation.	Reputed Age.	Cause of Death, and Remarks.	No. of Lives lost.				
									Explosion of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
1875.													
								to the bottom. The ground had parted at an oblique joint, of which I was assured there were no indications before the accident occurred - -	–	2	–	–	–
Nov. 17	24	Cwmorthin -	Merionethshire -	Cwmorthin Slate Co. -	Owen Owens -	Quarryman -	22	The breaking of a link, whereby a waggon containing slates got loose, and went down an incline with terrific speed, killing the poor man and causing much damage - - -	–	–	–	–	1
„ 30	25	Snailbeach -	Shropshire -	Snailbeach Mine Co. -	Thomas Blaney -	Miner -	62	The deceased was struck on the head by a piece of rock which suddenly and unexpectedly fell away at a considerable distance from him and rolled down upon him while he was in a stooping posture removing some stuff - -	–	1	–	–	–
Dec. 9	26	Holland's -	Merionethshire -	Holland and Co. - -	Edward Roberts -	Quarryman -	21	The water-wheel working the machinery at which the deceased was engaged dressing slates had, as he thought, become firmly fixed by ice, and wanting to set it free he rashly jumped upon the top of the wheel. His weight at once sent it rapidly round, and being unable to get off he was so shockingly crushed and mutilated that he died next day - - - -	–	–	–	–	1
„ 21	27	Wye Valley -	Montgomeryshire	Wye Valley Mining Co. -	Margretta Edwards	Dressing Girl	—	Crushed in some of the dressing machinery. It was a windy day, and it is supposed that some portion of her clothing was blown into the machinery and that she was so dragged in -	–	–	–	–	1
								Giving the Totals -	–	9	5	12	7

LIST OF MINES classed under the METALLIFEROUS MINES REGULATION ACT, in MR. T. F. EVANS' DISTRICT, 1874 and 1875.

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.*
ANGLESEY.			
1. John Richardson, East Parys United Mines, near Amlwch.	East Parys United	Near Amlwch	Thos. Mitchell.
2. Mona Mine Co., Amlwch	Mona	Ditto	Wm. Hughes.
3. Parys Mountain Mines Co., Limited, Amlwch.	Parys	Ditto	Thos. Mitchell.
BRECKNOCKSHIRE.			
1. Geo. R. Tetley, Nant-y-Car Mine, Llanwrthwl.	Nant-y-Car	Llanwrthwl	Henry Phillips.
CARDIGANSHIRE.			
1. Aberystwyth Silver Lead Mining Co., Aberystwyth.	Aberystwyth Silver Lead.	Near Aberystwyth	Jno. Trevethan.
2. R. Smith, Blaenceunant Mine, Llanfihangel-y-Creuddyn.	Blaenceunant	Llanfihangel-y-Creuddyn.	G. Wright.
3. Bronfloyd Mine Co., near Aberystwyth	Bronfloyd	Near Aberystwith	Jno. Davies.
4. W. Gundry, Bronmwyn Mine, Tregaron	Bronmwyn	Strata Florida	John Williams.
5. Edward Bennett, Bryn Arian and Pensarn Mine, near Taliessin.	Bryn Arian and Pensarn.	Near Taliessin	Fred. Williams.
6. Bwadrain Consols Mining Co., Limited, near Goginan.	Bwadrain Consols	Near Goginan	N. Bray.
7. Bwlch Consols Mining Co., Limited, near Goginan.	Bwlch Consols	Ditto	Ditto.
8. G. Williams and Son, Aberystwyth	Caegynon Lead	Glanrheidol	Thos. Hodge.
9. Cefn Brwyno Mining Co., Limited, near Aberystwyth.	Cefn Brwyno	Near Aberystwyth	Jas. Paull.
10. Clara Consols Mining Co., Goginan	Clara Consols	Goginan	Nichs. Bray.
11. Court Grange Mining Co., Tynycefn	Court Grange	Tyn-y-Cefn	Edwin Dunkin.
12. Crown Mining Co., Ponterwyd	Crown	Ponterwyd	Richard Harvey.
13. W. Jones, Cwmerfin Mine, near Aberystwyth.	Cwmerfin	Near Aberystwyth	Jno. Paull.
14. John Taylor & Sons, Queen Street Place, London.	Cwmystwyth	Llanfihangel-y-Creuddyn.	William Mitchell.
15. De Broke Mining Co., Limited, Devil's Bridge.	De Broke	Devil's Bridge	Thomas Hodge.
16. Messrs. Owen and McHeynham, Aberystwith.	Dolclettwr	Tretaliessin	John Williams.
17. Eagle Brook Mining Co., 16, Great Winchester Street, London.	Eagle Brook	Talybont, Glandovey.	Henry Tyack.
18. John Taylor & Sons, Queen Street Place, London.	East Darren	Near Aberystwyth	James Garland.
19. Robert Girdwood, Ella Mine, near Ystrad Meurig.	Ella	Ystrad Meurig	George Green.
20. Esgair Hir Mining Co., Limited, Ceulan and Maesmawr.	Esgair Hir	Ceulan and Maesmawr.	Jno. Williams.
21. Capt. T. A. Davis, Florida Mine, Strata Florida.	Florida	Strata Florida	Ditto.
22. Robert Girdwood, Gertrude Mine, near Devil's Bridge.	Gertrude	Devil's Bridge	George Green.
23. John Taylor & Sons, Queen Street Place, London.	Goginan and Level Newydd.	Near Aberystwyth	Jas. Paull.
24. Great Darren Mining Co., Goginan, near Aberystwyth.	Great Darren	Goginan	George Green.
25. Great West Van Mining Co., Ponterwyd	Great West Van	Ponterwyd	Thos. Hodge.
26. Grogwinion Mining Co., Limited, Aberystwyth.	Grogwynion	Near Aberystwith	John Kitto.
27. F. P. Strousberg, Machynlleth	Havan and Henfwlch.	Near Talybont	Evan Richards.
28. John Taylor & Sons, Queen Street Place, London.	Lisburne Mines	Pontrhydygroes	Thomas Ball.
29. Llywernog Lead Mining Co., Llwernog, near Aberystwyth.	Llywernog	Near Aberystwyth.	
30. C. E. Hayward, Llawrcwmbach Mine, near Goginan.	Llanrcwmbach	Near Goginan	J. Phillips.
31. C. Herbert Stokes, Aberystwyth	Mines Royal, Drosgol and Cavndurmawr.		Jno. Davies.

* The name of the Local Agent appears in the ordinary type, that of the Owner, Managing Director, or Secretary in italics.

LIST OF MINES in MR. T. F. EVANS' DISTRICT, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
CARDIGANSHIRE—*continued.*			
32. Monydd Gorddu Mining Co., Limited, Bow Street, Aberystwyth.	Monydd Gorddu	Bow Street	Richd. Rowse.
33. Plynlimmon Mining Co., Limited, near Ponterwyd.	Plynlimmon	Ponterwyd	Jno. Garland.
34. Powell Consolidated Mining Co., Limited, Ponterwyd.	Powell Consolidated	Ponterwyd	Nichs. Bray.
35. Rheidol Mining Co., Limited, Goginan, near Aberystwyth.	Rheidol	Goginan	John Ridge.
36. South Cwmystwyth Mine Co., near Aberystwyth.	South Cwmystwyth	Near Aberystwyth	John Kitto.
37. South Darren Mine Co., near Aberystwyth.	South Darren	Near Aberystwyth	John Boundy.
38. South Plynlimmon Mine Co., Steddfa Gurig.	South Plynlimmon	Steddfa Gurig	Wm. Rowland.
39. Talybont Mining Co., Talybont	Talybont	Talybont	Thos. Glanville.
40. Tanyrallt Silver Lead Mining Co., near Talybont.	Tanyrallt	Near Talybont	*C. Herbert Stokes.*
41. Tyllwyd Silver Lead Mining Co., near Aberystwyth.	Tyllwydd	Near Aberystwyth	John Paull.
42. John Taylor & Sons, Queen Street Place, London.	Vaughan	Near Aberystwyth	James Garland.
43. West Esgair Lle Mining Co., Ponterwyd	West Esgair Lle	Ponterwyd	Richd. Harvey.
CARNARVONSHIRE.			
1. Davies, Williams, and Co., Bettws-y-Coed.	Aberllyn	Near Bettws-y-Coed	Isaac Williams.
2. Adam Eyton, Holywell	Alltwen	Near Llanrwst	John Davies.
3. Assheton Mining Co., Limited, Llanengan, Pwllheli.	Assheton	Abersoch	John Craze.
4. John Roberts, Llanrochwyn, near Trefriw	Bryncenadon	Llanrochwyn	*John Roberts.*
5. Williams and Roberts, Llanrochwyn, near Trefriw.	Bwlchgarw	Ditto	Griffith Williams.
6. W. Hill & Sons, Chemical Manufacturers, Liverpool.	Cae Coch	Ditto	Robert Williams.
7. Joseph Taylor & Co., 86, London Wall, London.	Coedmawr Pool	Near Bettws-y-Coed	Joseph Netherton.
8. Cwm Dwyfor Mining Co., Llanfihangel-y-Pennant, viâ Carnarvon.	Cwm Dwyfor	Llanfihangel-y-Pennant.	Joseph Jewell.
9. Drws-y-Coed Mine Co., Carnarvon	Drws-y-Coed	Nantlle Vale	Thomas Lewis.
10. Gwydyr Park Consols Mining Co., Limited, near Llanrwst.	Gwydyr Park	Near Llanrwst	Wm. Bennetts.
11. Barkus & Reed, Hafna Mine, near Llanrwst.	Hafna	Ditto	Wm. Owen.
12. Llanrwst Lead Mining Co., Limited, Llanrwst.	Llanrwst	Ditto	Robt. Knapp.
13. Francis Cheers, 34, South John Street, Liverpool.	Nant-y-Gamer	Llandudno	William Brookes.
14. Thomas Goddard, Trewydyr, Llanrwst	Pencraig	Near Llanrwst	*Thomas Goddard.*
15. Symdde Dyllnan Copper Mine Co., Nantlle Vale, Carnarvon.	Symdde Dyllnan	Nantlle Vale	John Roberts.
16. J. T. Campbell, Tanybwlch Mine, Abersoch, Pwllheli.	Tanybwlch	Abersoch	W. B. Jeffrey.
17. John Hitchins, Tyntwll Mine, Llanrwst	Tyntwll	Llanrochwyn	Wm. Bennett.
18. Murchison & Pyne, Willoughby Mine, Trefriw, Conway.	Willoughby	Near Trefriw, Conway.	Hy. Nottingham.
CUMBERLAND.			
1. Ayle Burn Mining Co., Alston	Ayle Burn	Alston Moor	John P. Walton.
2. Alston Moor Mining Co., Alston	Bentyfield	Ditto	Jacob Craig.
3. Blagill Mining Co., Alston	Blagill	Ditto	Joseph Walton.
4. Brownley Hill Mining Co., Alston	Brownley Hill	Ditto	John P. Walton.
5. Bulman Hills Mining Co., Alston	Bulman Hills	Ditto	Ditto.
6. Caldbeck Fells Consolidated Lead and Copper Mining Co., Limited, Caldbeck.	Caldbeck Fells Consolidated.	Near Caldbeck	J. Polglase.
7. Calvert Mining Co., Alston	Calvert	Near Alston	Joseph Walton.
8. Cashwell Mining Co., Limited, Crossfell, Alston.	Cashwell	Near Crossfell, Alston.	John Peart.
9. Charles William and William Morrison Bell, Kirkland	Crossfell	Kirkland	Joseph Walton.
10. Dowgang Mine Co., Nenthead	Dowgang	Nenthead	Jonathan Walton.

List of Mines in Mr. T. F. Evans' District, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
Cumberland—*continued.*			
11. Dr. De Mey & Co., Dowgang Mine, Crossfell.	Dowke Burn	Crossfell	John Peart.
12. Dowpot, Syke, and Guttergill Mining Co., Alston.	Dowpot Syke and Guttergill.	Near Alston	Ditto.
13. Force Cragg Mining Co., Limited, Braithwaite, Keswick.	Force Cragg	Braithwaite	*J. Straughton.*
14. J. F. Masser & Co., Gallygill Syke and Bents Mine, Alston.	Gallygill Syke and Bents.	Near Alston	John Peart.
15. The London Lead Company, Middleton-in-Teesdale.	Garrigill Mines	Garrigill	*R. W. Bainbridge.*
16. Ditto ditto	Gilderdale and Whitley.	Near Alston	Ditto.
17. Alston Moor Mining Co., Limited, Alston	Grassfield	Ditto	Jacob Craig.
18. Green Banks Mining Company, Tynehead	Green Banks	Tynehead	John Peart.
19. D. C. Griffith & Co., Alston	Holyfield and Nattrass.	Alston	Ditto.
20. Keswick United Silver Lead Mines Co., Keswick.	Keswick United	Thornthwaite, Keswick.	James Farie.
21. London Lead Co., Middleton-in-Teesdale	Nenthead Mines	Nenthead	*R. W. Bainbridge.*
22. Alston Moor Mining Co., Alston	Nentsbury Greens	Alston Moor	Jacob Craig.
23. Patter Syke Mining Co., Tynehead	Patter Syke	Tynehead	John Peart.
24. Wilson & Co., Alston	Rodderup Fell	Alston	Isaac Walton.
25. Saddleback Mining Co., Limited, Threlkeld.	Saddleback	Threlkeld	John F. Nevin.
26. White, Austian, & Co., Tynehead, Alston	Tynehead	Tynehead, Alston	George Millican.
27. H. K. Spark, Newlands, near Keswick	Yewthwaite, Barrow and Goldscope.	Newlands	John Fisher.
Denbighshire.			
1. Consolidated Minera Mine Co., Minera, near Wrexham.	Consolidated Minera	Minera	Jesse Roberts.
2. Eglwyseg Extension Mining Co., near Llangollen.	Eglwyseg Extension	Near Llangollen	*C. B. Dyer.*
3. Llanarmon Mining Co., near Mold	Llanarmon	Near Mold	W. Clemence.
4. Minera Mining Co., Limited, Minera, Wrexham.	Minera	Near Wrexham	John Darlington.
5. Nant Minera Mining Co., Nant, Beesham, near Wrexham.	Nant Minera	Ditto	Fred. Owen.
6. Park Lead Mining Co., Limited, Minera, near Wrexham.	Park Lead	Ditto	Sampson Michell.
7. Pool Park Mining Co., Minera, near Wrexham.	Pool Park	Ditto	Sampson Michell and Son.
8. Five working miners	North Minera	Ditto	Five miners.
Derbyshire.			
1. Thomas Spencer, Back Settlements Mine, Middleton.	Back Settlements	Near Middleton	*A. M. Alsop.
2. Wass & Co., Lea Lead Works, Cromford	Bage	Wirksworth	Herbert Flint.
3. — Brooks, Blackbird Mine, Middleton	Blackbird	Middleton	*A. M. Alsop.
4. Benjamin Bagshaw, Stoney Middleton	Black Engine	Stoney Middleton and Eyam.	*Isaac Shimwell.
5. J. S. A. Shuttleworth & Co., Stoney Middleton.	Black Hole	Ditto	Ditto.
6. John Goodwin, Ashford	Black Sheep	Ashford	Ditto.
7. Thomas Walton, Brassington	Blackstones	Brassington	*A. M. Alsop.
8. J. Whittaker, Elton	Blakelowfield	Elton	Ditto.
9. Henry C. Heathcote, Blythe Mine, Winster	Blythe	Winster	*Jno. Wagstaffe.
10. John Doxey and others, Bold Pit, Middleton.	Bold Pit	Middleton	*A. M. Alsop.
11. Wass & Son, Lea Lead Works, Cromford	Bradwell	Ditto	Ditto.
12. Joshua Repton, Brassington	Brick Hollow	Brassington	Ditto.
13. Wass & Son, Lea Lead Works, Cromford	Bright's Friendly	Wirksworth	N. Doxey.
14. John Britland, Cromford	Britlands Ash Cross	Cromford	*A. M. Alsop.
15. John Brooks, Middleton	Brooks Founder	Middleton	Ditto.
16. Benjn. Bunting, Bonsall	Brunt	Bonsall	Ditto.
17. Joshua Sellers & Co., Ashford	Butts	Ashford	*I. Shimwell.
18. Goodwin, Pett, & Co., Hartington	Cabins	Hartington	*J. Wagstaffe.
19. William and Anthony Furniss, Ashford	Cackle Mackle	Ashford	*I. Shimwell.
20. Benjn. Bunting, Bonsall	Chance	Bonsall	*A. M. Alsop.

* Barmaster.

LIST of MINES in MR. T. F. EVANS' DISTRICT, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
DERBYSHIRE— *continued.*			
21. Chapeldale Mining Co., Monyash	Chapeldale	Mony Ash	*I. Shimwell.
22. J. Batterley, Brassington	Charles Lum	Brassington	*A. M. Alsop.
23. Wass & Son, Lea Lead Works, Cromford	Coarse Hill	Ditto	Ditto.
24. Charles Brooks, Brassington	Conway	Ditto	Ditto.
25. John Spencer and others, Middleton	Croft	Middleton	Ditto.
26. George Boam, Elton	Crooked Acres	Elton	Ditto.
27. Joseph Henstock, Bonsall	Daisy Spot	Bonsall	Ditto.
28. Wass & Son, Lea Lead Works, Cromford	Dinah	Wirksworth	Ditto.
29. Ditto ditto ditto	Elton Cross	Winster	*J. Wagstaffe.
30. Ditto ditto ditto	Fallow Field	Cromford	*A. M. Alsop.
31. Dr. Cantrell, Friendly Mine, Wirksworth	Friendly	Wirksworth	Ditto.
32. —— Marple, Friendly Mine, Middleton	Ditto	Middleton	Ditto.
33. Wass & Son, Lea Lead Works, Cromford	Gang	Cromford	Ditto.
34. Ditto ditto ditto	Gell's Nor Cliff	Wirksworth	Ditto.
35. John Webster, Elton	Gorrist	Elton	Ditto.
36. Wm. Mycock and Jno. Needham, Hartington.	Gorsey Rake	Hartington	*J Wagstaffe.
37. C. Gratton, Wirksworth	Gratton's Scrin	Wirksworth	*A. M. Alsop.
38. Wass & Son, Lea Lead Works, Cromford	Gray Mare	Ditto	Ditto.
39. Ditto ditto ditto	Hardbeat	Elton	Ditto.
40. Hardrake Mining Co., Ashford	Hardrake	Ashford	*I. Shimwell.
41. Wass & Son, Lea Lead Works, Cromford	Heyspots	Winster	*Jno. Wagstaffe.
42. Ditto ditto ditto	Hill Top	Middleton	*A. M. Alsop.
43. Walter Hartle & Co., Bonsall	Holt	Bonsall	Ditto.
44. Benjn. Bunting, ditto	Horsedale	Ditto	Ditto.
45. Henry Gratton, ditto	Horsedale Hollow	Ditto	Ditto.
46. Wass & Son, Lea Lead Works, Cromford	Huard Stone	Brassington	Ditto.
47. George Webster, Elton	Inkerman	Elton	Ditto.
48. Wass & Son, Lea Lead Works, Cromford	Jacksons	Middleton	Ditto.
49. Charles Buxton, Middleton	Longrake	Ditto	Ditto.
50. Joseph Garrett, Middleton-by-Youlgreave	Ditto	Middleton by Youlgreave.	Ditto.
51. Henry Evans, ditto	Ditto	Ditto	Ditto.
52. John Fairburn & Co., Ashford	Longstone Edge	Ashford	*I. Shimwell.
53. William Spencer, Middleton by Wirksworth.	Magpie	Middleton by Wirksworth.	*A. M. Alsop.
54. Wass & Son, Lea Lead Works, Cromford	Maltsters	Wirksworth	Ditto.
55. George Johnson, Hartington	Meadow Rake	Hartington	*J. Wagstaffe.
56. Wass & Son, Lea Lead Works, Cromford	Merry Tom	Middleton by Wirksworth.	*A. M. Alsop.
57. Ditto ditto ditto	Middle Peak	Wirksworth	Ditto.
58. Ditto ditto ditto	Mill Close Stoup	Wensley	Hy. Greatorex.
59. Ditto ditto ditto	Moletrap	Matlock	N. Doxey.
60. Ditto ditto ditto	Moorhigh	Taddington	*I. Shimwell.
61. Ditto ditto ditto	Mount Pleasant	Wensley	*A. M. Alsop.
62. Ditto ditto ditto	Old Bailey's	Wirksworth	Ditto.
63. Ditto ditto ditto	Old Brassington	Brassington	Ditto.
64. William Street, Wirksworth	Old Gells	Wirksworth	Ditto.
65. Wass & Son, Lea Lead Works, Cromford	Orchard	Ditto	Ditto.
66. Orchard Mining Co., Limited, Matlock	Orchard Mine	Snitterton	Ditto.
67. Wass & Son, Lea Lead Works, Cromford	Philip's	Wirksworth	Ditto.
68. Henry C. Heathcote, Winster	Pitts	Winster	*J. Wagstaffe.
69. John Spencer, Middleton by Wirksworth	Potosi	Ible	*A. M. Alsop.
70. Wass & Son, Lea Lead Works, Cromford	Primrose	Cromford	Ditto.
71. Ditto ditto ditto	Ditto (Dean Hollow).	Ditto	Ditto.
72. Thomas Brooks, Middleton by Wirksworth.	Providence	Middleton by Wirksworth.	Ditto.
73. Wass & Son, Lea Lead Works, Cromford	Raithe	Elton	Hy. Greatorex.
74. Ditto ditto ditto	Rantor	Wirksworth	*A. M. Alsop.
75. Ditto ditto ditto	Ratchwood	Ditto	Ditto.
76. Joseph Bunting, Bonsall	Red Roods	Bonsall	Ditto.
77. John Gould, Brassington	Roundlow	Brassington	Ditto.
78. Robert How Ashton & Co., Ashford	Seedlow	Ashford	*I. Shimwell.
79. Wass & Son, Lea Lead Works, Cromford	Shore Vein	Cromford	*A. M. Alsop.
80. Job Bunting, Bonsall	Silver Eye	Bonsall	Ditto.
81. —— Batterley, Brassington	Sing in Bed	Brassington	Ditto.
82. John Sellers & Co., Ashford	Slack Scrin	Ashford	*I. Shimwell.
83. Robert Oliver, Ashford	Small Rake	Ditto	Ditto.
84. Samuel Sheldon, Middleton by Wirksworth.	Snake	Middleton by Wirksworth.	*A. M. Alsop.

*Barmas

List of Mines in Mr. T. F. Evans' District, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
Derbyshire—*continued.*			
85. Wass & Son, Lea Lead Works, Cromford	Spar Rake	Middleton by Wirksworth.	*A. M. Alsop.
86. Thomas Briddon & Co., Brassington	Standells	Brassington	Ditto.
87. Joseph Ripton, Brassington	Stillington	Ditto	Ditto.
88. Isaac Woodins, Bonsall	Stubbin	Bonsall	Ditto.
89. James Buckley, Brassington	Swang	Brassington	Ditto.
90. Edward Holmes, Cromford	Sweetner	Cromford	Ditto.
91. —— Bruce, ditto	Tail Edge	Ditto	Ditto.
92. Wass & Son, Lea Lead Works, Cromford	Thumpersitch	Middleton by Wirksworth.	Ditto.
93. Francis Redfern's Executors, Tideswell	Tideslow	Tideswell	*Isaac Shimwell.
94. Wass & Son, Lea Lead Works, Cromford	Wakebridge	Crich	Benjn. Mould.
95. J. Batterley, Brassington	Waterholes	Brassington	*A. M. Alsop.
96. Joseph and Anthony Bunting, Alsop	Water Pits	Bonsall	Ditto.
97. Richd. and James Furniss, Ashford	Water Saw Rake	Ashford	*I. Shimwell.
98. Wass & Son, Lea Lead Works, Cromford	Welchmans	Middleton by Wirksworth.	*A. M. Alsop.
99. Ditto ditto ditto	Whitesfounder	Wirksworth	Ditto.
100. Martin Oliver, Ashford	Wide Rake	Ashford	*I. Shimwell.
101. William Bradley, Bonsall	Yield	Bonsall	*A. M. Alsop.
Durham.			
1. Derwent Mines Co., Limited, Blanchland	Derwent Mines	Blanchland	John Morpeth.
2. Joshua Hogg, Byers, Harwood	Grass Hill	Harwood	John Peart.
3. Green Hurth Mining Co., Limited, Harwood, Middleton-in-Teesdale.	Green Hurth	Harwood	J. H. Robinson.
4. Healey Field Mining Co., near Shotley Bridge.	Healey Field	Shotley Bridge	Wm. F. Muschamp.
5. Hexham and Edmondbyers Mining Co., Limited, Edmondbyers.	Hexham and Edmondbyers.	Swandale	Wm. Dodd.
6. Langdon Mining Co., Middleton-in-Teesdale.	Langdon	Middleton	Thos. Watson.
7. London Lead Co., Middleton-in-Teesdale	London Lead Co.'s Mines, viz.:—Eastrake, Sharnberry, Little Eggleshope, Wiregill, Snaisgill, High Skears, Coldberry Skears, Coldberry, Redgroves, Whitfield Brow, Yew Tree, and Flakebrigg, Yorkshire, Ashgill Head.	All near Middleton-in-Teesdale.	R. W. Bainbridge, General Manager for the Company.
8. Newbiggin Mining Co., Middleton-in-Teesdale.	Newbiggin Mines	Middleton-in-Teesdale.	A. Hutchinson.
9. Rookhope Valley Mining Co., Stanhope	Rookhope Valley	Stanhope	David Brown.
10. Wolsingham Lead Co., Wolsingham	Sunnyside	Wolsingham	J. T. Bell.
11. Teesdale Mining Co., Limited, Middleton-in-Teesdale.	Teesdale	Middleton-in-Teesdale.	J. H. Robinson.
12. Willy Hole Mining Co., Harwood	Willy Hole	Harwood	John Peart.
Flintshire.			
1. W. D. Hargreaves & Co., Pant-y-Mwyn, near Mold.	Bryncoch and East Pant-y-Mwyn.	Near Mold	*W. D. Hargreaves.*
2. Celyn Bog Silver Lead Mining Co., Limited, Holywell.	Celyn Bog	Near Holywell	*R. J. Mostyn.*
3. Duchess of Westminster Mining Co., Limited, Holywell.	Duchess of Westminster.	Brynford, Holywell	Jesse Davies.
4. John Holt, Halifax	Flintshire Lead Mines.	Near Mold	Thomas Miners.
5. Great Fron Fawnog Consolidated Lead Mining Co., Limited, near Mold.	Great Fron Fawnog	Near Mold	Wm. Wasley.
6. Golden Grove Mine Co., Limited, Golden Grove, near Rhyl.	Golden Grove	Near Rhyl	Wm. Francis.
7. Gorsidd and Merllyn, Consolidated Mines Co., Limited, Whitford, near Holywell	Gorsedd and Merllyn	Whitford	*E. Bartlett.*
8. Grosvenor Mining Co., Halkyn, Holywell	Grosvenor	Halkyn	

*Barmaster.

LIST of MINES in MR. T. F. EVANS' DISTRICT, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
FLINTSHIRE—*continued.*			
9. Gwaenysgor Mining Co., near Rhyl	Gwaenysgor	Near Rhyl	Wm. Francis.
10. John Taylor & Sons, Queen Street Place, Upper Thames Street, London.	Halkyn Deep Level	Halkyn	Wm. Littlejohns.
11. Hazel Grove Mining Co., Limited, Holywell.	Hazel Grove	Brynford	Wm. Wasley.
12. Lady Constance Mine Co., Rhes-y-Cae	Lady Constance	Rhes-y-Cae	(abandoned).
13. Edward Sunderland, Edgbaston, Birmingham.	Llwyny-cosyn	Near Holywell	Jno. Jones.
14. North Prince Patrick Lead Mining Co., near Holywell.	North Prince Patrick.	Holywell Mountain	Ditto.
15. E. J. Bartlett, London	New South Merllyn	Near Holywell	Robt. Rowlands.
16. North Henblas Mine Co., Limited, near Holywell.	North Henblas	Near Holywell	(abandoned).
17. North Hendre Lead Mining Co., Halkyn	North Hendre	Halkyn	John Lean.
18. North Prince Patrick Mining Co., Holywell.	North Prince Patrick.	Holywell Mountain.	
19. J. S. and G. Dawes, Pant Du and Waen Lâs Mine, near Mold.	Pant Du and Waen Lâs.	Near Mold	A. B. Dawes.
20. John and Edward Lloyd & Co., Brynford, Holywell.	Peny-bryn	Brynford	John Lloyd.
21. Edward Jones & Co., Cilcen, Holywell	Pen-y-Gelli	Cilcen	*Edw. Jones.*
22. Pant-y-Buarth Mining Co., Hendrebiffa, Mold.	Pant-y-Buarth	Hendrebiffa	Edward Jones.
23. Pant-y-Mwyn Lead Mining Co., Mold	Pant-y-Mwyn	Near Mold	Wm. Wasley.
24. Parry's Mine Co., Halkin	Parry's	Halkyn	John Roberts.
25. Penrorsedd Mining Co., Northop	Penrorsedd	Rhosesmor	John Lloyd.
26. Prince Patrick Mining Co., Holywell	Prince Patrick	Halkyn Mountain	Ditto.
27. Pwllgwenllan Mining Co., Halkyn	Pwll Gwen Llan	Halkyn	Stephen Harper.
28. Queen Silver Lead Mining Co., Limited, Office, 37A, Oldham.	Queen Silver Lead	Pen-y-Bale Mountain.	E. Evans.
29. Rhosesmor Mining Co., Offices, 16, Corn Exchange Chambers, Chester.	Rhosesmor	Halkyn	Thos. Julian.
30. Harding, Cooper, & Co., Sir Edward Mine, near Holywell.	Sir Edward	Near Holywell	Joseph Eustice.
31. Edwin Lloyd & Co., South Pant-y-Ne Mine, Holywell.	South Pant-y-Ne	Ditto	Edwin Lloyd.
32. South Prince Patrick Mines Co., Limited, Halkyn, near Holywell.	South Prince Patrick.	Ditto	Jno. Jones.
33. St. David's Lead Mining Co., Limited, near Holywell.	St. David's	Pantasa	Ditto.
34. St. Lawrence, Victoria, and Valentine Amalgamated Mining Co., Limited, Holywell.	St. Lawrence, Victoria and Valentine.	Near Holywell	*D. Forrest.*
35. St. Patrick Mining Co., Limited, Halkyn	St. Patrick	Halkyn.	
36. Talacre Mining Co., near Rhyl	Talacre	Near Rhyl	Wm. Sandoe.
37. Talargoch Mining Co., Limited, Rhyl	Talargoch	Near Rhyl	*Wm. Smith.*
38. Trellynia Lead Mining Co., Halkyn	Trellynia	Halkyn	Jno. Pritchard.
39. Union Mining Co., Halkyn	Union	Ditto.	
40. Vron United Lead Mine Co., Halkyn	Vron United	Halkyn	Stephen Harper. (in liquidation).
41. Thomas Jones & Co., Wagstaff Mine, Halkyn.	Wagstaff	Halkyn	Thomas Jones.
42. West Bryn Celyn Lead Mining Co., Cilcaen, Flint.	West Bryn Celyn	Cilcaen	John Lloyd.
43. West Milwr Mine Co., Holywell	West Milwr	Near Holywell	Wm. Francis.
44. West Pant-y-Go Mine Co., Halkyn	West Pan-y-Go	Halkyn	Stephen Harper.
45. West Prince Patrick Mining Co., Holywell.	West Prince Patrick.	Ysceifiog	David Jones.
LANCASHIRE.			
1. Coniston Mining Co., Coniston	Coniston Mines	Coniston-in-Furness	William Bawden.
2. Great Coniston Copper Mining Co., Limited, Greenburn, near Coniston.	Great Coniston	Greenburn	Isaac Williams.
3. Coniston Mining Co., Coniston	Tilberthwaite	Near Coniston	William Bawden.
MERIONETHSHIRE.			
1. Caergwernog Mine Co., Llanelltyd, Dolgelly.	Caegwernog	Llanelltyd	W. Milford.
2. The Gold Co., Dolgelly	Cefn Coch	Ganllwyd	W. Powell.

List of Mines in Mr. T. F. Evans' District, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
Merionethshire—*continued.*			
3. Glan Clwyd Mining Co., Gwyddelwern	Glan Clwyd	Glan Clwyd	Jno. Kemp.
4. Glasdir Mining Co., Limited, Llanfachreth	Glasdir	Llanfachreth	Jno. Rowe.
5. Great Manod Mine Co., near Festiniog	Great Manod	Near Festiniog	Jno. Roberts.
6. Edward Jones, Lletty Mine, Harlech	Lletty	Llanfihangel-y-traethan.	Edwd. Lloyd.
7. Welsh Mineral Co., Newtown, Mont.	Mellingoch & Drwsynant.	Newtown	Albert J. Ellis.
8. Penrhyn Lead Mining Co., Llanfrothen	Penrhyn	Llanfrothen	Jno. Edwards.
9. Clogau Co., Limited, Dolgelly	Vigra and Clogau	Llanaber	W. Milford.
Montgomeryshire.			
1. Aberdaunant Lead Mining Co., Limited, Llanidloes.	Aberdaunant	Near Llanidloes	Simon Toy.
2. F. C. Hills & Co., Deptford	Berwin Phosphorite	Near Llangynog	D. C. Davies.
3. Sir John Conroy, Bart.,	Cae Conroy	Near Llanbrynmair	Thos. Owen.
4. G. A. Walker & Co., Caelan Llanbrynmair	Caelan	Ditto	John Hughes.
5. Cwmbyr Mining Co., Machynlleth	Cwmbyr	Near Machynlleth	N. Bray.
6. Joshua Moss, Sheffield	Cwm Ricket and Maesnant.	Near Llanidloes	Thos. Grenfell.
7. C. Herbert Stokes, Aberystwyth	Cwm Tudor	Near Machynlleth	(suspended).
8. F. P. Strousberg, Machynlleth	Dyfngwm	Penegoes	Evan Richards.
9. Dylife Lead Mining Co., near Llanbrynmair.	Dylife	Near Llanbrynmair	Edwd. Rogers.
10. East Llangynog Mine Co., near Llanrhaiadr.	East Llangynog	Near Llanrhaiadr	E. Pascoe.
11. East Van Mining Co., Limited, Llanidloes	East Van	Near Llanidloes	W. Williams.
12. C. Herbert Stokes, Aberystwyth	Esgair Llyn	Near Machynlleth	Isaac Williams.
13. Glangwden Mine Co., Llanidloes	Glangwden	Near Llanidloes	*W. J. Lefeaux.*
14. Glyn Mine Co., Limited	Glyn	Ditto	James Roach.
15. Sir John Conroy, Bart	Llanerchyraur	Llanbrynmair	Thomas Owen.
16. Llanidloes Mine Co., Limited, Llanidloes	Llanidloes	Brynpostig	John Kitto.
17. Llanidloes Wheal Van, Llanidloes	Llanidloes Wheal Van.	Near Llanidloes (suspended).	Ditto.
18. Llanrhaiadr Lead Mining Co., near Llangynog.	Llanrhaiadr	Near Llangynog.	
19. C. Herbert Stokes, Aberystwyth	Llechwedd Mawr	Borders of Montgomery.	Abel Paul.
20. Ditto Ditto	Moelfadian	Near Llanbrynmair	Isaac Williams.
21. Nantiago Mine Co., near Llanidloes	Nantiago	Near Llanidloes	*W. J. Lefeaux.*
22. Nant-y-Ricket Mine Co., Llanidloes	Nant-y-Ricket	Ditto	Thos. Grenfell.
23. New Llangynog Lead Mining Co., Llangynog.	New Llangynog	Llangynog	Jas. Hill.
24. Leigh, Howell, & Co., Llanidloes	Pen-y-Clyn	Llanidloes	Wm. Clemence.
25. W. Taylor, 1, Brunswick Street, Liverpool	Rhydybenoch	Near Llanidloes	Thos. Grenfell.
26. Van Mining Co., Limited, Llanidloes	Van	Ditto	Wm. Williams.
27. Matthew Greene & Co., Van Consols, Llanidloes.	Van Consols	Ditto	James Roach.
Northumberland.			
1. Walton and Cowper, Fallowfield Mine, Hexham.	Fallowfield	Near Hexham	J. Henderson.
2. Bewick & Partners, Limited, Langley Barony Mine, Haydon Bridge.	Langley Barony	Haydon Bridge	*T. J. Bewick*
3. R. R. Bucky Morley, Fell Mine, Haydon Bridge.	Morley Fell	Ditto	F. Bell.
4. Miss Matilda Hall, Sattlingstones, near Haydon Bridge.	Sattlingstones	Ditto	F. W. Hall.
5. Stonecroft and Greyside Mining Co., Newbrough.	Stonecroft and Greyside.	Chapelry of Newbrough.	Thos. Ware.
6. Robert Lister & Co., Haydon Bridge	Water House and Whinnetly Mines.	Near Haydon Bridge.	
7. W. B. Beaumont, M.P.	W. B. Lead Mines	Allendale and Weardale.	J. C. Cain.
Radnorshire.			
1. Cwm Elan Mining Co., Limited, 110, Cannon Street, London.	Cwm Elan	Rhayadr	Wm. Goldsworthy.

LIST of MINES in MR. T. F. EVANS' DISTRICT, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
SHROPSHIRE.			
1. Bog Mining Co., Minsterley	Bog	Minsterley	W. T. Harris.
2. Ladywell Mining Co., Shelve, Minsterley	Ladywell	Shelve	Arthur Waters.
3. Leeds Rock House Lead Mining Co., Limited, Shelve, near Minsterley.	Leeds Rock House	Ditto	Edwd. Gledhill.
4. Old Batholes Mining Co., Limited, Worthen, Minsterley.	Old Batholes	Worthen	Arthur Waters.
5. Pennerley Mining Co., Limited, Minsterley.	Pennerley	Near Minsterley	W. T. Harris.
6. Perkins Beach Mining Co., Minsterley	Perkins Beach	Ditto	S. M. Ridge.
7. Thomas Jackson & S. M. Ridge, Rhadley Mine, Minsterley.	Rhadley	Wentnor	Edwd. Wardman.
8. Roman Gravels Mining Co., Limited, Minsterley.	Roman Gravels	Shelve	Arthur Waters.
9. Shelve Pool Mining Co., Minsterley	Shelve Pool	Ditto	R. Waters.
10. Snailbeach Mine Co., Minsterley	Snailbeach	Near Minsterley	Henry Dennis.
11. South Roman Gravels Mining Co., Minsterley.	South Roman Gravels.	Shelve	Jno. W. Powning.
12. Tankerville Mine Co., Limited, Minsterley.	Tankerville	Worthen	Arthur Waters.
13. West Stiperstones Mine Co., Limited, Wentnor, near Minsterley.	West Stiperstones	Wentnor	Richd. Smitham.
14. West Tankerville Mine Co., Limited, Worthen, near Minsterley.	West Tankerville	Worthen	Arthur Waters.
15. Mrs. Margaret Maginnis, Chirbury	Wortherton	Chirbury	Edwd. Edwards.
16. Nancarrow & Co., Chirbury	Ditto	Ditto	Enoch Parry.
WESTMORLAND.			
1. Greenside Mine Co., Patterdale	Greenside	Patterdale	T. Taylor.
2. London Lead Co., Middleton-in-Teesdale	Hilton, Murton, and Mallerstang.		R. W. Bainbridge.
3. Nether Hearth Mining Co., Dufton	Nether Hearth	Manor of Dufton	Wm. Vipond.
4. London Lead Co., Middleton-in-Teesdale	Silver Band, Hardshins, Dufton Fell, and Lodge Gill.		R. W. Bainbridge.
ISLE OF MAN.			
1. Ballacorkish Mine Co., Rushen	Ballacorkish	Rushen	Jno. Barkell.
2. Bradda Mining Co., Limited, Bradda	Bradda	Bradda	R. Barkell.
3. East Foxdale Mining Co., Limited, Foxdale.	East Foxdale	Foxdale	Edwd. Bawden.
4. Curwen and Fearon, East Snaefell Mine	East Snaefell	Maughold	W. H. Rowe.
5. Falcon Cliff Mining Co., Limited, Falcon Cliff.	Falcon Cliff	Colby	Nich. Bryan.
6. Isle of Man Mining Co., Limited	Foxdale	Foxdale	Wm. Kitto.
7. Great Laxey Mining Co., Limited, Laxey	Glenroy	Lonan	Jno. Cornish.
8. Great East Foxdale Mining Co., near Douglas.	Great East Foxdale	Near Douglas	Edwd. Bawden.
9. Great Laxey Mining Co., Laxey	Great Laxey	Laxey	Jno. Cornish.
10. H. B. Noble & Co., Great Snaefell Mine, Snaefell.	Great Snaefell	Snaefell, Laxey	Henry James.
11. North Laxey Mining Co., Maughold	North Laxey	Maughold	R. Rowe.

IRON ORE MINES.

CUMBERLAND.			
1. William Baird & Co., Lamplugh	Bairds	Lamplugh	James Berwick.
2. Lord Leconfield	Bigrigg and Cleator Moor.	Bigrigg	James Davidson.
3. Joseph Fearon, Frizington	Birks	Frizington	Jodn Curnie.
4. Crossfield Iron Ore Co., Crossfield	Crossfield	Crossfield	Jno. M. Main.
5. Cleator Iron Ore Co., Cleator	Cleator	Cleator	*J. S. Ainsworth.*
6. Saml. Wagstaffe Smith, Frizington	Crossgill	Frizington	E. G. Hughes.
7. Ennerdale Kelton Fells Iron Ore Mine Co., Ennerdale.	Ennesdale Kelton Fells.	Ennerdale	*B. Clarke.*
8. Whitehaven Iron Ore Mines Co., Limited, Eskdale.	Eskdale	Eskdale	Thos. Roswarne.
9. Eskett Iron Ore Co., Eskett, Carnforth	Eskett	Eskett	Jos. H. Robinson.
10. S. and J. Lindow, Whitehaven	Fletcher	Bigrigg Moor	Jas. Kitchin.
11. Ditto ditto	Frizington	Frizington	Ditto.

List of Mines in Mr. T. F. Evans' District, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
Cumberland—*continued.*			
12. James Bain & Co., Frizington Parks	Frizington Parks	Frizington	Jas. Shanks.
13. Fletcher & Hodgetts, Frizington	High House	Ditto	*Alfred Hodgetts.*
14. Hodbarrow Mining Co., Holborn Hill	Hodbarrow	Millom	Cedric Vaughan.
15. Dalmellington Iron Ore Co., Frizington	Holebeck	Frizington	J. W. Bulkeley.
16. Jacktrees Iron Ore Co., Cleator Moor	Jacktrees	Cleator Moor	Jas. Kitchin.
17. Lamplugh Mining Co., Lamplugh	Lamplugh	Lamplugh	Stephen Ware.
18. S. and J. Lindow, Whitehaven	Meadow and Woodend.	Woodend	Jas. Kitchin.
19. John Stirling, Montreal Iron Ore Mines	Montreal	Near Whitehaven	Jno. Jenkins.
20. Moor Row Mining Co., Moor Row	Moor Row	Moor Row	Jas. Stout.
21. Garbutt and Harrison, Bigrigg	Pallaflatt	Bigrigg	Jno. Nairn.
22. Parkside Mining Co., Cleator	Parkside	Cleator	Jas. Scoular.
23. Lake District Hematite Mining Co., Limited, Cockermouth.	Rob Roy	Legburthwaite	John Hall.
24. The Salter and Eskett Park Mining Co., Limited, near Whitehaven.	Salter & Eskett Park	Salter and Eskett	*Henry Kitchin.*
25. Scalelands Mining Co., Frizington	Scalelands	Frizington	Wm. Miller.
26. S. and J. Lindow, Whitehaven	Walsh and Bigrigg	Bigrigg Moor	Jas. Kitchin.
27. G. J. Eveson, Waterblean Iron Mine, Millom.	Waterblean	Millom	Solomon Birkett.
28. Winder Iron Ore Co., Frizington	Winder	Frizington	Joseph Monkhouse.
29. Maryport Hematite Co., Maryport	Windergill	Arlecdon	James H. Gondie.
30. James Bain & Co., Woodend	Woodend	Egremont	James Shanks.
31. Yeathouse Mining Co., Arlecdon	Yeathouse	Frizington	J. and J. Hodgson.
Denbighshire.			
1. Ditton Brook Iron Ore Co., near Warrington.	Nant Ucha	Abergele	J. Dalzell.
Durham.			
1. Weardale Iron and Coal Co., Weardale	Levelgate	Weardale	J. R. Crone.
2. Ditto ditto ditto	North Grane	Ditto	Ditto.
3. Ditto ditto ditto	North Groove Rake	Ditto	Ditto.
4. Ditto ditto ditto	Red Vein	Ditto	Ditto.
5. Ditto ditto ditto	Rowantree, A.	Ditto	Ditto.
6. Ditto ditto ditto	Rowantree, B.	Ditto	Ditto.
7. Ditto ditto ditto	South Groove Rake	Ditto	Ditto.
8. Ditto ditto ditto	West Slitt	Ditto	Ditto.
Flintshire.			
1. Joshua Lancaster and others, Flintshire Hematite Mines, Cwm, near Rhyl	Flintshire Hematite	Cwm Mountain	Edward Thomas.
2. Burnes, Anderson, & Co., Liverpool	Henfryn Hematite	Newmarket	Geo. Harrison.
Lancashire.			
1. Ledger Hodgson & Co., Aldingham Mine, near Ulverston.	Aldingham	Scales	Henry Woolcock.
2. Furness Iron and Steel Co., Limited, Askam-in-Furness.	Askam	Near Dalton-in-Furness.	*Wm. Crossley.*
3. Dalton Hematite Mining Co., Ulverston	Dalton	Ditto	John Denney.
4. Furness Iron and Steel Co., Askam	Ditto	Ditto	*Wm. Crossley.*
5. Carnforth Hematite Iron Co., Limited, Carnforth.	Dunnerdale	Broughton-in-Furness.	Edwd. Barton.
6. George Banks Ashburner, Dalton	Elliscales	Near Dalton-in-Furness.	Joseph Askew.
7. Furness Iron and Steel Co., Askam	Goldmere	Ditto	*Wm. Crossley.*
8. Green Haume Hematite Co., Limited, Dalton-in-Furness.	Green Haume	Ditto	*Geo. F. Pearson.*
9. Highfield Hematite Iron Ore Co., Limited, Dalton-in-Furness.	Highfield	Ditto	*Thos. Massicks.*
10. Ulverston Mining Co., Limited, Ulverston	Lindal Cote	Ditto	*Wm. Salmon.*
11. Furness Iron and Steel Co., Askam	Lindal Moor,	Ditto	*Wm. Crossley.*
12. Lindal and Ousby Iron Ore Co., Limited, Little Urswick.	Lindal and Ousby	Little Urswick	Wm. Postlethwaite.
13. Harrison, Ainslie, & Co., Ulverston	Lindal Moor	Near Ulverston	Edmund Ray.
14. The Duke of Buccleuch	Longlands	Near Dalton-in-Furness.	*Edwd. Wadham.*
15. Furness Iron and Steel Co., Askam	Martin	Ditto	*Wm. Crossley.*

LIST of MINES in MR. T. F. EVANS' DISTRICT, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
LANCASHIRE—*continued.*			
16. Solway Hematite Co., Limited, Maryport	Moot Hall	Lindal-in-Furness	*Edmund G. Fosby.*
17. Barrow Hematite Steel Co., Limited, Barrow-in-Furness.	Mouzell	Dalton-in-Furness	*Richd. Hosking.*
18. Ditto ditto ditto	Newton	Ditto	Ditto.
19. Ditto ditto ditto	Park	Ditto	Ditto.
20. Yarlside Mining Co., Furness Abbey	Parkhouse	Ditto	W. Boulton.
21. Furness Iron and Steel Co., Askam	Pennington	Near Ulverston	Wm. Crossley.
22. Ditto ditto ditto	Plumpton	Ditto	Ditto.
23. Kennedy Brothers, Ulverston	Roanhead and Askam.	Dalton-in-Furness	H. Kendall.
24. John Brogden & Sons, Stainton Mining Co., Urswick.	Stainton	Parish of Urswick	*Wm. Salmon.*
25. Barrow Hematite Steel Co., Limited, Barrow.	Ditto	Dalton-in-Furness	*Richd. Hoskin*
26. Ditto ditto ditto	Stank	Barrow-in-Furness	Ditto.
27. Furness Iron and Steel Co., Askam	Thwaite Flatt	Near Dalton-in-Furness.	*Wm. Crossley.*
28. Barrow Hematite Steel Co., Limited, Barrow.	Whitriggs and Old Hills.	Lindal-in-Furness	*Richd. Hosking.*
WESTMORLAND.			
1. Lake District Hematite Iron Ore Co., Limited, Grasmere.	Fairfield	Grasmere	John Hall.
2. Muse, Straughton, Ashton, & Co., Providence Iron Ore Mine, Grasmere.	Providence Iron Ore.	Ditto	Isaac Mossop.

SLATE MINES.

CARNARVONSHIRE.			
1. Hendre Slate Quarry Co., Limited, Dolyddelen, Bettws y Coed.	Hendre	Dolyddelen	O. Parry.
2. J. G. Cooper, Penllyn Slate Quarry, Dolyddelen.	Penllyn	Ditto	Wm. Owen.
3. Port Penrhyn Slate Co., Limited, Llanllechid, near Bangor.	Port Penrhyn Slate	Llanllechid	Geo. J. White.
MERIONETHSHIRE.			
1. Robert Davies Pryce, Aberllefenny Slate Quarries, Corris.	Aberllefenny	Talyllyn	David Jones.
2. Liverpool and Birkenhead Slate and Slab Co., Vernon Chambers, Liverpool.	Braich Du	Near Trawsfynydd (suspended).	*Thos. Dodd.*
3. Braich Goch Slate Quarry Co., Corris	Braich Goch	Near Corris	*Edwd. Williams.*
4. Brongronwy Slate and Slab Quarry Co., Limited, near Festiniog.	Brongronwy	Near Festiniog	*John. Hood.*
5. Abergynolwyn Slate and Slab Quarry Co., Limited, Abergynolwyn, Towyn.	Bryn yr Eglwys	Near Towyn	Robt. Williams.
6. Bugail Slate Co., Limited, Four Crosses, Festiniog.	Bugail	Penmachno	E. Evans.
7. Carlyle Slate and Slab Co., Limited, Dinas Mawddwy.	Carlyle	Dinas Mawddwy	Thos. Forster.
8. Croesor United Slate Co., Limited, Llanfrothen.	Croesor	Llanfrothen	J. E. Jones.
9. Cwmorthin Slate Co., Limited, Portmadoc	Cwmorthin	Tan-y-Grisian	*I. F. Sims.*
10. H. N. Hughes and Nephew, Corris, Machynlleth.	Cymerau	Corris	David Owen.
11. Diphwys Casson Slate Co., Limited, Blaenau, Festiniog.	Diphwys Casson	Festiniog	Evan P. Jones.
12. Talyllyn Slate Quarries Co., Corris	Gaewern	Corris	Jno. J. Davies.
13. Saml. Holland, Esq., M.P., Caerleon	Holland's	Festiniog	*Saml. Holland.*
14. Llidiart yr Arian Slate Quarry Co., Llanfrothen.	Llidiart yr Arian	Llanfrothen	*Jno. W Greaves.*
15. John W. Greaves & Sons, Portmadoc	Llechwedd	Ditto	
16. Maen Offeren Slate Co., Festiniog	Maen Offeren	Ditto	Wm. Owen.
17. New Rhosydd Slate Co., Limited, Festiniog	New Rhosydd	Ditto	W. W. Morris.
18. Welsh Slate Co., Festiniog	Palmerston	Ditto	Robt. Owen.
19. North Wales Slate Co., Limited	Park	Penrhyndeudraeth	Wm. Kellow.
20. Rowlands and Hughes, Ratgoed, Corris	Ratgoed	Corris	David Owen.
21. Festiniog Slate Quarry Co., Limited	Rhiwbach	Penmachno	*James G. Tugford.*

List of Mines in Mr. T. F. Evans' District, 1874 and 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
SLATE MINES—*continued.*			
MERIONETHSHIRE—*continued.*			
22. Rhiwbryfdir Slate Co., Portmadoc -	Rhiwbryfdir -	Near Festiniog -	*E. M. Mathew.*
23. Union Slate and Slab Co., Limited, Great Moelwyn.	Union - -	Great Moelwyn -	*Geo. Potter.*
24. Thomas Mark Carter, Voelgron Slate Quarry, Festiniog.	Voelgron - -	East of Festiniog -	Griffith Griffiths.
25. F. S. Percival & Co., Festiniog - -	Votty and Bowydd	Festiniog -	W. C. Walker.
26. Wrysgaen Slate Co., Festiniog - -	Wrysgaen - -	Near Festiniog -	Wm. Davies.
MONTGOMERYSHIRE.			
1. Sir Edward Buckley, Bart., M.P. -	Hendre-ddu -	Hendre-ddu, near Aberangell.	Wm. Williams.

LIST OF MINES classed under the METALLIFEROUS MINES REGULATION ACT, in MR. T. F. EVANS' DISTRICT, 1875.

Owner or Company and Postal Address.	Name of Mine.	Where Situated.	Owner or Agent.*
ANGLESEY.			
1. Messrs. John and Charles Richardson, East Parys Mine, Amlwch.	East Parys -	Near Amlwch -	T. Mitchell.
2. Mona Mine Co., Amlwch -	Mona - -	Ditto -	W. Hughes.
3. Parys Mountain Mines Co., Limited, Amlwch.	Parys - -	Ditto -	T. Mitchell.
BRECKNOCKSHIRE.			
1. John R. Tetley, Nant-y-Car Mine, Llanwrthwl.	Nant-y-Car -	Llanwrthwl -	Hy. Phillips.
CARDIGANSHIRE.			
1. Aberystwyth Silver Lead Mining Co., Aberystwyth.	Aberystwyth Silver Lead.	Near Aberystwyth	Jno. Trevethan.
2. Robert Smith, 4, New Broad Street, London.	Blaenceunant -	Llanfihangel y Creuddyn.	George Wright.
3.	Blaendyffryn -	Near Goginan -	*Abandoned.*
4. W. and T. Gundry, London - -	Bron Mwyn -	Ystrad Meurig, R.S.O.	Jno. Williams.
5. Bryn Arian and Pensarn Mining Co., Glandovey,	Bryn Arian and Pensarn.	Glandovey -	Fred. Williams.
6. Bwadrain Consols Mining Co., Goginan, Aberystwyth.	Bwadrain - -	Goginan - -	Nichs. Bray.
7. Bwlch Consols Mining Co., Goginan, Aberystwyth.	Bwlch Consols -	Ditto -	Ditto.
8. Bwlchstyllan Mining Co., Goginan, Aberystwyth.	Bwlchstyllan -	Ditto -	Ditto.
9. Caegynon Mining Co., Goginan, Aberystwyth.	Caegynon - -	Ditto -	*Abandoned.*
10. C. E. Hayward, Caenant Mine, Goginan, Aberystwyth.	Caenant - -	Ditto -	J. Phillips.
11. Cefn Brwyno Mining Co., Cwm Brwyno, Aberystwyth.	Cefn Brwyno -	Ditto -	*Jno. Paull.*
12. Clara Consols Mining Co., Limited, Ponterwyd, Aberystwyth.	Clara Consols -	Ponterwyd -	Nich. Bray.
13. Court Grange Mining Co., Limited, Bow Street, Aberystwyth.	Court Grange -	Bow Street -	*Geo. Green.*
14. Crown Mining Co., Limited, Ponterwyd, Aberystwyth.	Crown - -	Ponterwyd -	R. Harvey.
15. Cwm Erfin Mining Co., Goginan, Aberystwyth.	Cwm Erfin -	Goginan - -	Jno. Paull.
16. John Taylor and Sons - - -	Cwmystwyth -	Llanfihangel C. Upper.	Wm. Mitchell.
17. De Broke Mining Co. - - -	De Broke -	Devil's Bridge, Aberystwyth.	T. Hodge & Son.
18. Dolwen Mining Co., Limited - -	Dolwen - -	Ditto ditto	J. B. Balcombe.
19. Eagle Brook Mining Co., Limited -	Eagle Brook -	Talybont, Glandovey.	Hy. Tyack.
20. John Taylor and Sons - - - -	East Darren -	Goginan, Aberystwyth.	Jas. Garland.
21. Esgair Hir Mining Co., Limited - -	Esgair Hir -	Glandovey -	Fred. Williams.
22. Robert Girdwood - - - -	Esgair Mwyn -	Ystrad Meurig, R.S.O.	S. G. Dunn.
23. Attenborough and Vickers - -	Florida - -	Ditto -	Jno. Williams.
24. Robert Girdwood - - -	Gertrude - -	Devil's Bridge, Aberystwyth.	S. G. Dunn.
25. John Taylor and Sons - - -	Goginan and Level Newydd.	Goginan - -	Jas. Paull.
26. Robert Girdwood - - -	Great Darren -	Ditto -	Wm. Jones.
27. Great West Van Mining Co., Limited -	Great West Van -	Ponterwyd -	T. Hodge.
28. Grogwinion Lead Mining Co., Limited -	Grogwinion -	Pontrhydygroes -	John Kitto.
29. Hafan and Henfwlch - - - -	Hafan and Henfwlch.	Llanbadarn -	Evan Richards.
30. John Taylor and Sons - - -	Lisburne Mines -	Pontrhydygroes -	Thos. Ball.
31. C. E. Hayward - - - - -	Llawrcwmbach -	Goginan, Aberystwyth.	Josiah Phillips.
32. Melindwr Mining Co. - - -	Melindwr Valley -	Ditto ditto	W. Trewethan.

* The name of the local Agent appears in the ordinary type; that of the Owner, Managing Director, or Secretary, in italics.

List of Mines in Mr. T. F. Evans' District, 1875—*continued.*

Owner or Company and Postal Address.	Name of Mine.	Where Situated.	Owner or Agent.
CARDIGANSHIRE—*continued.*			
33. C. Herbert Stokes	Mines Royal, Drosgol and Cavndwrmawr.	Glandovey, R.S.O.	*C. Herbert Stokes.*
34. Monydd Gorddu Lead Mining Co., Limited	Monydd Gorddu	Bow Street, R.S.O.	Richd. Rowse.
35. Nant-yr-Onen Consols Silver Lead Mining Co.	Nant-yr-Onen	Near Aberystwyth	*Suspended.*
36. George Pell	New Lisburne	Pontrhydygroes	Joseph Ball.
37. C. E. Hayward	Pencraigddu	Near Goginan	J. Phillips.
38. Plynlimmon Mining Co., Limited	Plynlimmon	Steddfa Gurig, Ponterwyd.	Jno. Garland.
39. Powell Consolidated Mining Co.	Powell Consolidated	Ponterwyd	Nichs. Bray.
40. Rheidol Mining Co., Goginan, near Aberystwyth.	Rheidol	Goginan	John Ridge.
41. John Kitto, Llanidloes	South Cwmystwyth	Lower Gwnnws	*J. Kitto.*
42. J. H. Murchison & Co., 8, Austin Friars, E.C., London.	South Darren	Goginan	John Boundy.
43. Attenborough & Vickers, South Lisburne Mine, Ystrad Meurig, R.S.O.	South Lisburne	Ystrad Meurig	Jno. Williams.
44. South Plynlimmon Mine Co., Pont Erwyd, Aberystwyth (*suspended*).	South Plynlimmon	Pont Erwyd	Wm. Rowland.
45. Talybont Mining Co., Limited, 198, Palmerston Buildings, E.C., London.	Talybont	Glandovey	Thos. Glanville.
46. Tanyrallt Silver Lead Mining Co., Glandovey, R.S.O.	Tanyrallt	Ditto	*C. Herbert Stokes.*
47. Tyllwyd Silver Lead Mining Co., Cwmrheidol, Goginan, Aberystwyth.	Tyllwyd	Cwmrheidol	John Paull.
48. *Suspended*	Tynfron	Goginan	Josiah Phillips.
49. *In liquidation*	Vale of Rheidol	Cwmrheidol	Jno. Paull.
50. John Taylor & Sons, Queen St. Place, London.	Vaughan	Goginan	Jas. Garland.
51. West Goginan Mining Co., Goginan, Aberystwyth.	West Goginan	Ditto	Richd. Couch.
52. Robert Girdwood, West Lisburne Mine, Pontrhydygroes, Aberystwyth.	West Lisburne	Pontrhydygroes	S. G. Dunn.
53. West Esgair Lle Mining Co., Ponterwydd, Aberystwyth.	West Esgair Lle	Ponterwyd	James Williams.
CARNARVONSHIRE.			
1. Adam Eyton, Flint	Alltwen	Bettws-y-Coed	Jno. Davies.
2. Assheton Mining Co., Limited, Abersoch, near Pwllheli.	Assheton	Abersoch	John Craze.
3. John Roberts, Quay House, Carnarvon	Bryn Cenadon	Llanrochwyn	*John Roberts.*
4. W. Hill & Sons, Vauxhall Road, Liverpool.	Cae Coch	Ditto	Robt. Williams.
5. Joseph Taylor, Manchester	Coedmawr Pool	Near Llanrwst	Wm. Bennetts.
6. Adam Eyton, Flint	Corlanfarchog	Ditto	Jno. Davies.
7. Cwm Dwyfor Mining Co., Rhyd Ddu, near Carnarvon.	Cwm Dwyfor	Rhyd Ddu	Joseph Jewell.
8. Drwsycoed Mining Co., Drwsycoed, near Carnarvon.	Drwsycoed	Nantlle Vale	Thos. Lewis.
9. Fucheslas Mining Co., Limited (*now in liquidation*).	Fucheslas	Near Llanrwst	Wm. Bennetts.
10. Great Mountain Mining Co., Nantlle Valley, Carnarvon.	Great Mountain	Nantlle Valley	Jno. H. Tilly.
11. Griffith Williams and Co., Gwaithuchaf Mine, near Llanrwst.	Gwaithuchaf	Trewydyr	*G. Williams.*
12. Gwydyr Park Mining Co. (in liquidation)	Gwydyr Park	Near Llanrwst	Wm. Bennetts.
13. Barkus and Reed, Hafna Mine, near Llanrwst.	Hafna	Ditto	Wm. Owen.
14. Llanrwst Lead Mining Co., Lanrwst	Llanrwst	Ditto	Robt. Knapp.
15. Thomas Goddard, Pencraig Mine, Llanrwst	Pencraig	Ditto	*Thos. Goddard.*
16. Port Nigel Lead Mining Co., Limited, Llanengan, Pwllheli.	Port Nigel	Llanengan	Joel Manley.
17. Suspended	Sygun	Beddgelert	W. S. Jewell.
18. Symdde Dylluan Mining Co., Nantlle Vale, Penygroes.	Symdde Dylluan	Nantlle Vale	Jno. Roberts.
19. J. T. Campbell, Tan-y-Bwlch Mine, Abersoch.	Tan-y-Bwlch	Abersoch	W. B. Jeffrey.
20. Murchison and Pyne, Willoughby Mine, Llanrwst.	Willoughby	Near Llanrwst	Hy. Nottingham.

LIST of MINES in Mr. T. F. EVANS' DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
DENBIGHSHIRE.			
1. C. T. Gibbons, Plas Madoc, near Wrexham	Boundary	Minera	*C. T. Gibbons.*
2. Bryn Alyn Lead Mining Co., Limited, Llanarmon, near Mold.	Bryn Alyn	Llanarmon	Wm. Clemence.
3. Bryneisteddfod Lead Mining Co., Llanrwst	Bryneisteddfod	Llanrwst	Thos. Cartwright.
4. Burton & Co., part of Union Mine, Minera, Wrexham.	Burton & Co.	Wrexham	C. J. Gibbons.
5. Consolidated Minera Lead Mining Co., near Wrexham.	Consolidated Minera	Minera	Jesse Roberts.
6. C. B. Dyer and Co., Parys Lodge, Amlwch	Eglwseg Extension	Near Llangollen	C. B. Dyer.
7. Llanarmon Lead Mining Co., Limited, near Mold.	Llanarmon	Mold	Wm. Clemence.
8. Minera Mining Co., Limited, Minera, Wrexham.	Minera	Minera	*Jno. Fraser.*
9. Robert Jones & Co., North Minera Mine, Bwlch Gwyn, near Wrexham.	North Minera	Bwlch Gwyn	Robt. Jones.
10. G. and T. S. Dawes, Llanverras, Mold	Pant du and Waen Lâs.	Llanverras	John Dawes, jr.
11. Park Lead Mining Co., Limited, Minera, Wrexham.	Park	Minera	Sampson Mitchell.
12. Pool Park Mining Co., Minera, near Wrexham.	Pool Park	Minera	Ditto.
DERBYSHIRE.			
1. Thomas Spencer, Middleton-by-Wirksworth	Back Settlements	Middleton	*A. M. Alsop.
2. Wass & Son, Lea Lead Works, Cromford	Bage	Wirksworth	*Wass & Co.*
3. Benjn. Bagshaw, Stoney Middleton	Black Engine	Stoney Middleton	*Isaac Shimwell.
4. J. S. A. Shuttleworth & Co.	Black Hole	Ditto	Ditto.
5. John Goodwin	Black Sheep	Ashford	Ditto.
6. John Doxey	Bold Pit	Middleton-by-Wirksworth.	*A. M. Alsop.
7. Wass & Son	Bonnie Lass	Cromford	Ditto.
8. Ditto	Bradwell	Middleton-by-Wirksworth.	Ditto.
9. Joshua Ripton	Brick Hollow	Carsington	Ditto.
10. Wass & Son	Bright's Friendly	Wirksworth	*Wass & Son.*
11. Samuel Holmes	Bunting's Scrin	Ball Eye, Bonsall	*A. M. Alsop.
12. Samuel Bembridge	Catholes	Brassington	Ditto.
13. Benjn. Bunting	Chance	Bonsall	Ditto.
14. Daniel Holmes	Chance	Cromford	Ditto.
15. Wass & Son	Coarse Hill	Brassington	Ditto.
16. John Spencer	Croft	Middleton-by-Wirksworth.	Ditto.
17. Wass and Son	Dinah	Wirksworth	Ditto.
18. Ditto	Fallowfield	Cromford	Ditto.
19. John Evans	Fowslow Wills	Hopton Moor	*Thos. Taylor.
20. Henry Marple	Friendly	Middleton-by-Wirksworth.	*A. M. Alsop.
21. Wass & Son	Gang	Cromford	Ditto.
22. Gell Mine Co.	Gell (Upper)	Hopton Moor	*Thos. Taylor.
23. John Webster	Gorrist	Elton	*A. M. Alsop.
24. William Orme	Gorsey Dale	Bonsall Moor	Ditto.
25. Wass & Son	Gray Mare	Wirksworth	Ditto.
26. Great Rake Mining Co.	Great Rake	Brassington	Ditto.
27. Charles Doxey	Griff Bage	Hopton Moor	*T. Taylor.
28. Wass & Son	Hill Top	Middleton-by-Wirksworth.	*A. M. Alsop.
29. John Burkley	Hopton Pint	Hopton Moor	*T. Taylor.
30. Wesley Bunting	Horsedale Hollow	Bonsall	*A. M. Alsop.
31. Thomas Farn	Highfield	Brassington	Ditto.
32. George Webster	Inkerman	Elton	Ditto.
33. Wass & Son	Jacksons	Middleton-by-Wirksworth.	Ditto.
34. William Allen	Killhill Rake	Flagg, near Buxton	*J. Shimwell.
35. Benjn. Buckley	Kitchen View	Wirksworth	*A. M. Alsop.
36. E. H. Garton	Leg Close Top	Snitterton	Ditto.
37. Joseph Garrett and others	Long Rake	Middleton-by-Goulgrave.	Ditto.
38. Joseph Fairburn & Co.	Lonestone Edge	Ashford	*J. Shimwell.
39. Wass and Son	Maltsters	Wirksworth	*A. M. Alsop.
40. Edward Brooks	Merry Tom	Middleton-by-Wirksworth.	Ditto.

* Barmaster.

List of Mines in Mr. T. F. Evans' District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mines.	Where situated.	Owner or Agent.
DERBYSHIRE—*continued.*			
41. Wass and Son	Middle Peak	Wirksworth	A. M. Alsop.*
42. Ditto	Moletrap	Matlock	*Wass & Co.*
43. E. M. Wass	Moorhigh	Taddington	J. Shimwell.*
44. Wm. Walton	Mouldridge	Pike Hall	A. M. Alsop.*
45. John Doxey	New Butts	Cromford	Ditto.
46. Gell Mining Co.	Nether Gell	Hopton Moor	T. Taylor.*
47. Wass & Son	Nightingale Leys	Wirksworth	A. M. Alsop.*
48. George Doxey	Nog	Middleton-by-Wirksworth.	Ditto.
49. William Street	Old Gells	Wirksworth	Ditto.
50. Joshua and John Repton	Old Knoll	Hopton Pasture	T. Taylor.*
51. Wass & Son	Orchard	Wirksworth	A. M. Alsop.*
52. Orchard Mining Co., Limited	Ditto	Snitterton, Matlock	Ditto.
53. George Walters	Paddock	Ditto ditto	Ditto.
54. Edward Barker	Pekin	Wirksworth	Ditto.
55. Job Slack (Agent)	Perseverance	Longcliff, Brassington.	Ditto.
56. Joseph Dakin	Providence	Matlock, Bath	Ditto.
57. Thomas Brooks	Ditto	Middleton-by-Wirksworth.	Ditto.
58. William Froggatt	Putty Hill	Ashford, near Bakewell.	J. Shimwell.*
59. Wass & Co.	Raithe	Elton	*Wass & Co.*
60. Anthony Doxey	Rank	Middleton-by-Wirkswork.	A. M. Alsop.*
61. Wass & Son	Ratchwood	Wirksworth	Ditto.
62. Michael Hardy	Roguery	Wensley Pasture	Ditto.
63. John Gould, jun.	Roundlow	Brassington	Ditto.
64. Job Bunting	Scorah Slack	Bonsall Moor	Ditto.
65. Robert How Ashton & Co.	Seedlow	Ashford	J. Shimwell.*
66. Charles Gratton	Sheepholes	Wirksworth	A. M. Alsop.*
67. Job Bunting	Silver Eye	Bonsall	Ditto.
68. Benj. Spencer	Ditto	Middleton-by-Wirksworth.	Ditto.
69. John Sellars & Co.	Slack Scrin Pipe	Ashford	J. Shimwell.*
70. Robert Oliver	Small Rake	Ditto	Ditto.
71. Samuel Sheldon	Snake	Middleton-by-Wirksworth.	A. M. Alsop.*
72. Wass & Son	Spar Rake	Ditto	Ditto.
73. Standhills Mining Co.	Standhills	Bradbourne	Ditto.
74. Joseph Repton	Stillington	Brassington	Ditto.
75. Isaac Woodiwiss	Stubben	Bonsall	Ditto.
76. John Spencer	Sun Side Nether	Hopton Moor	T. Taylor.*
77. William Bease	Sun Side Upper	Ditto	Ditto.
78. James Buckley	Swang	Brassington	A. M. Alsop.*
79. Wass & Son	Thumpersitch	Middleton-by-Wirksworth.	Ditto.
80. Executors of Francis Redford	Tideslow	Tideswell	J. Shimwell.*
81. Wass & Co.	Wakebridge	Crick	*Wass & Co.*
82. W. Batterby	Water Holes	Carsington	A. M. Alsop.*
83. Joseph and AnthonyBunting	Water Pits	Bonsall	Ditto.
84. Richard and James Furniss	Watersaw Rake	Ashford	J. Shimwell.*
85. William Bradley	Yield	Bonsall	A. M. Alsop.
FLINTSHIRE.			
1. W. D. Hargreaves and others	Bryncoch and East Pantymwyn Union.	Pantymwyn, near Mold.	*John Hughes.*
2. Richard Edwards & Co.	Bryn Main	Halkyn Mountain, Rhes-y-Cae.	Richard Edwards.
3. Celyn Bog Silver Lead Mining Co., Limited, near Holywell.	Celyn Bog	Near Holywell	*R. J. Mostyn.*
4. Cilcaen Hall Lead Mining Co.	Cilcaen Hall	Near Mold	John Pritchard.
5. Duchess of Westminster Lead Mining Co., Limited.	Duchess of Westminster.	Brynford, Holywell	*David Jones.*
6. East Hendre Mining Co., Limited	East Hendre	Halkyn parish, near Mold.	John Pritchard.
7. *Suspended*	Erwfelin	Rhydymwyn, near Mold.	
8. Flintshire Lead Mining Co.	Flintshire Lead	Mount Pleasant, Mold.	Thos. Miners.

* Barmaster.

LIST of MINES in MR. T. F. EVANS' DISTRICT, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
FLINTSHIRE—*continued.*			
9. The Fron Hall United Mining Co., Limited	Fron Hall	Gwernymynydd, near Mold.	*J. E. Edwards.*
10. Golden Grove Mining Co., Limited	Golden Grove	Near Llanasa, Holywell.	W. Sandoe.
11. Gorsedd & Merlyn Consols Mining Co., Limited.	Gorsedd and Merllyn.	Near Holywell	W. Parry.
12. Great Fron Fawnog Consolidated Lead Mining Co., Limited.	Great Fron Fawnog	Near Mold	W. Wasley.
13. Grosvenor Lead Mining Co.	Grosvenor	Halkyn, Holywell	John Lloyd.
14. Gwaenysgor Mining Co. Limited	Gwaenysgor	Near Prestatyn	W. Sandoe.
15. John Taylor & Sons	Halkyn Deep Level	Halkyn, Holywell	W. Littlejohns.
16. Hazel Grove Mining Co., Limited	Hazel Grove	Brynford, Holywell	*David Jones.*
17. Company in liquidation	Holywell Level	Holway, Holywell	David Edwards.
18. Jonathan Gill and James Caulfield, 3, Church Street, Manchester.	Kilmorey Mining Sett.	Brynford	*James Caulfield.*
19. Lady Constance Mining Co., Limited	Lady Constance	Rhes-y-Cae, Holywell	*David Jones.*
20. Saint Laurence, Victoria, and Valentine Amalgamated Lead Mining Co., Limited	Saint Laurence, Valentine, and Victoria.	Near Holywell	D. Forrest.
21. Edwin Sunderland, Edgbaston, Birmingham.	Llwynycosyn	Llwynycosyn, Holywell.	John Jones.
22. Nant Minera Mining Co., Limited	Nant Minera	Nant Bersham, Wrexham.	*Fred. Owen.*
23. New South Merllyn Mining Co., Limited	New South Merllyn	Near Holywell	Robt. Rowlands.
24. North Henblas Mining Co., Limited	North Henblas	Ditto	*Edwd. W. Bird.*
25. North Hendre Lead Mining Co., Limited	North Hendre	Near Mold	Goodman Ellis.
26. North Prince Patrick Mining Co., Limited, 86, London Wall, London.	North Prince Patrick.	Holywell Mountain	Jno. Jones.
27. Pant y Buarth Mining Co.	Pant y Buarth	Gwernaffield, Mold	Edwd. Jones.
28. Pant y Mwyn Lead Mining Co., Limited	Pant y Mwyn	Near Mold	Wm. Watley.
29. Parry's Mine Co.	Parry's	Halkyn, Holywell	Jno. Roberts.
30. Pennant Barytes and Lead Mining Co., Limited.	Pennant	Tremeirchion	John Kemp.
31. Penrorsedd Mining Co.	Penrorsedd	Rhosesmor	*Geo. Hughes.*
32. Prince Patrick Lead Mining Co., Limited	Prince Patrick	Halkyn, Holywell	Jno. Lloyd.
33. Richard Evans and Co.	Pwll Gwenllan	Ditto	Edwd. Williams.
34. *Suspended*	Queen Silver Lead	Ditto	*James Hughes.*
35. Rhosesmor Mine Co., Limited, 16, Corn Exchange, Chester.	Rhosesmor	Ditto	Thos. Julian.
36. St. David's Mining Co., 20, Colmore Row, Birmingham.	St. Davids	Pant Ataph, Holywell	Jno. Jones.
37. St. Patrick Mine Co., Limited	St. Patrick	Halkyn, Holywell	Wm. Francis.
38. Rev. D. Jones, Brynford, Holywell	Silver Rake	Brynford, Holywell	*David Jones.*
39. Cooper & Harding	Sir Edward	Near Holywell	Joseph Eustice.
40. South Pant-y-ne Mining Co.	South Pant-y-ne	Ditto	*Thomas Price.*
41. South Prince Patrick Lead Mining Co., Limited, 20, Colmore Road, Birmingham.	South Prince Patrick	Halkyn, Holywell	Jno. Jones.
42. Talacre Mining Co.	Talacre	Near Holywell	Wm. Sandoe.
43. Talargoch Mining Co., Limited	Talargoch	Dyserth, near Rhyl	*Wm. Smith.*
44. Trellynia Lead Mining Co., Limited	Trellynia	Trellynia, Halkyn, Holywell.	Jno. Pritchard.
45. Joseph Davies and others	Union	Halkyn Mountain, Holywell.	Joseph Davis.
46. Charles Eley & Co., London	Vron Lead	Ditto	Stephen Harper.
47. Thomas Jones & Co.	Wagstaff	Ditto	*Thos. Jones.*
48. West Bryn Celyn Lead Mining Co., Limited.	West Bryn Celyn	Rhydymwyn, Mold	Jno. Lloyd.
49. West Milwr Lead Mining Co., Limited	West Milwr	Near Holywell	Wm. Francis.
50. Richards & Co., Liverpool	West Pant y Go	Rhes-y-cae	Peter Jones.
51. David Jones, Brynford	West Prince Patrick	Ditto	*David Jones.*
MERIONETHSHIRE.			
1. The Gold Company	Cefn Coch	Ganllwyd, near Dolgelly.	Wm. Powell.
2. The Welsh Mineral Company	Drws y Nant	Dolgelly	Richd. Tilsley.
3. (*Suspended*)	Fucheslas, &c.	Talsarnau	Robt. Roberts.

List of Mines in Mr. T. F. Evans' District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
Merionethshire—*continued.*			
4. Glan Clwyd Mining Co.	Glanclwyd	Derwen, near Corwen	Jno. Kemp.
5. Glasdir Mining Co., Limited	Glasdir	Llanfachreth, Dolgelly.	Jno. Rowe.
6. B. L. Barrow	Great Manod	Festiniog	J. Roberts.
7. Edward Jones	Harlech Lletty	Talysarnau	Edwd. Lloyd.
8. Penrhyndeudraeth Lead Mining Co., Penrhyndeudraeth.	Penrhyndeudraeth	Penrhyndeudraeth	*G. S. Jones.*
9. Clogau Co., Limited	Vigra & Clogau	Bontddu, Dolgelly	W. Powell.
Montgomeryshire.			
1. Aberdaunant Lead Mining Co., Limited	Aberdaunant	Near Llanidloes	Simon Toy.
2. F. C. Hills & Co.	Berwyn	Llangynog	D. C. Davies.
3. Sir John Conroy, Bart.	Cae Conroy	Llanbrynmair	Thomas Owen.
4. G. A. Walker & Co.	Caelan	Ditto	Edward Evans.
5. The Cwmbyr Mining Co., Limited	Cwmbyr	Near Machynlleth	N. Bray.
6. Joshua Moss & Co.	Cwm Ricket & Maesnant.	Near Llanidloes	Thos. Grenfell.
7. Last & Co.	Cyfartha	Penegoes	Evan Richards.
8. Colonel Strousberg	Dyfngwm	Ditto	Ditto.
9. Dylife Lead Mining Co., Limited	Dylife	Llanbrynmair	Edwd. Rogers.
10. (*Abandoned*)	East Cwm Fron	Llanidloes.	
11. East Van Mining Co., Limited	East Van	Ditto	Wm. Williams.
12. (*Abandoned*)	Glan Severn	Ditto	*J. Kitto.*
13. Glangwden Mine Co.	Glangwden	Ditto	*Wm. J. Lefeaux.*
14. Matthew Greene & others	Glyn	Bryntail, Llanidloes	
15. Sir John Conroy, Bart.	Llanerchyraur	Llanbrynmair	Thomas Owen.
16. Llanidloes Lead Mining Co., Limited	Llanidloes Lead	Llanidloes	John Kitto.
17. Llanidloes Wheal Van Mining Co.	Llanidloes Wheal Van	Ditto	Ditto.
18. Llanrhaiadr Lead Mining Co., Limited	Llanrhaiadr	Llanrhaiadr, viâ Oswestry.	E. Pascoe.
19. The Welsh Mineral Company	Llwynybrain	Llwynybrain, Newtown.	Richd. Tilsley.
20. Nantiago Mine Co.	Nantiago	Llanidloes	Wm. Jas. Lefeaux.
21. *Unknown at present*	Nant y Ricket	Near Llanidloes	Thos. Grenfell.
22. New Llangynog Lead Mining Co.	New Llangynog	Llangynog, near Oswestry.	Jas. Hill.
23. Leigh Howell & Co.	Pen y Clyn	Llanidloes	Wm. Clemence.
24. Rhoswydol Mining Co., Limited	Rhoswydol	Machynlleth	S. G. Dunn.
25. Rhydybenoch Mining Co.	Rhydybenoch	Near Llanidloes	Thos. Grenfell.
26. Van Mining Co., Limited	Van	Llanidloes	Wm. Williams.
27. Matthew Greene & others	Van Consols	Bryntail, Llanidloes	James Roach.
28. West Wye Valley Mining Co., Limited	West Wye Valley	Llangurig	Jno. Kitto.
29. Mrs. Margaret Maginnis	Wotherton	Near Chirbury	Robt. Williams.
30. Wye Valley Lead Mining Co.	Wye Valley	Llangurig	John Kitto.
Radnorshire.			
1. New Cwm Elan Mining Co.	New Cwm Elan	Rhayadr	Wm. Goldsworthy.
Shropshire.			
1. Bog Mining Co., Limited	Bog	Near Minsterley	W. T. Harris.
2. Ladywell Mining Co., Limited	Ladywell	Ditto	Arthur Waters.
3. Old Batholes Mining Co., Limited	Old Batholes	Ditto	Ditto.
4. Pennerley Mining Co., Limited	Pennerley	Ditto	W. T. Harris.
5. (*In liquidation*)	Perkins Beach	Ditto.	
6. Rhadley Mining Co.	Rhadley	Stiperstones, Minsterley.	S. M. Ridge.
7. Roman Gravels Mining Co., Limited	Roman Gravels	Minsterley	Arthur Waters.
8. Shelve Pool Mining Co. (*abandoned*)	Shelve Pool	Ditto	Rd. Waters.
9. The Snailbeach Mining Co., Limited	Snailbeach	Ditto	Hy. Dennis.
10. South Roman Gravels Mine Co., Limited	South Roman Gravels	Shelve, near Minsterley.	Jno. W. Powning.
11. Tankerville Mining Co., Limited	Tankerville	Minsterley	Arthur Waters.
12. (*Abandoned*)	West Stipertones	Near Minsterley.	
13. West Tankerville Mining Co., Limited	West Tankerville	Ditto	Ditto.
14. Wotherton Mining Co., Limited	Wotherton	Chirbury	Enoch Parry.
Isle of Man.			
1. Ballacorkish Mining Co.	Ballacorkish	Near Colby	Jno. Barkell.
2. Bradda Mining Co., Limited	Bradda	Rushen	R. Barkell.

List of Mines in Mr. T. F. Evans' District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
Isle of Man—*continued.*			
3. Central Foxdale Mining Co., Limited -	Central Foxdale -	Foxdale -	Edwd. Bawden, jr.
4. East Snaefell Mining Co. -	East Snaefell -	Maughold -	W. H. Rowe.
5. Falcon Cliff Mining Co., Limited -	Falcon Cliff -	Rushen, Colby -	Richd. Barkell.
6. Isle of Man Mining Co., Limited -	Foxdale - -	Foxdale St. John's	William Kitto.
7. Great Laxey Mining Co., Limited -	Glenroy -	Near Laxey -	F. Reddicliffe.
8. Great East Foxdale Mining Co. -	Great East Foxdale	Foxdale -	Edwd. Bawden.
9. Great Laxey Mining Co., Limited -	Great Laxey -	Laxey Glen -	F. Reddicliffe.
10. H. B. Noble, Douglas -	Great Snaefell -	Snaefell Mountain	Henry James.
11. Manx Mineral Company -	Manx Mineral -	East Baldwin -	John Crowe.
12. North Laxey Mining Co., Limited -	North Laxey -	Maughold, Ramsey	R. Rowe.
13. Joseph Fearon - - -	Rennie Laxey -	Ditto ditto	W. H. Rowe.
CHERT MINE.			
1. Joseph Smith & Sons, Hornington, Burton-on-Trent.	Bakewell Chert -	Bakewell - -	*Joseph Smith & Sons.*
FIRE SAND MINE.			
Carnarvonshire.			
1. Francis Cheers, 34, South John Street, Liverpool.	Nant-y-Gamer -	Llandudno - -	*Francis Cheers.*
IRON ORE MINES.			
Denbighshire.			
1. Stock, Gamble, and Thorburn - -	Nantuchaf Iron Ore	Near Abergele -	Johnston Dalzell.
Flintshire.			
1. Cwm Mountain Iron Ore Co. - -	Cwm Mountain -	Near Rhyl - -	Edwd. Thomas.
2. Burnes, Anderson, & Co. - - -	Henfryn Hematite	Ditto - -	George Harrison.
LIMESTONE MINES.			
Denbighshire.			
1. Vale of Clwyd Lime Co. - - -	Graig Wen - -	Near Ruthin - -	Chas. Roberts & Co.
Derbyshire.			
1. His Grace the Duke of Devonshire - -	Black Limestone -	Ashford in the Water	Joseph Twigg.
Shropshire.			
1. The Steeraway Lime Co. - - -	Hatch Workings -	Steeraway, Wellington.	James Groom.
2. Lilleshall Limestone Co. - - -	Lilleshall - -	Lilleshall - -	John Bolt.
SLATE MINES.			
Carnarvonshire.			
1. Alexander Slate Co., Limited - - -	Alexandra - -	Moel Tryfan, Carnarvon.	John Menzies.
2. Bugail Slate Co., Limited - - -	Bugail - -	Cwt y Bugail, Four Crosses.	Henry Roberts.
3. Hendre Ddu Slate Co., Limited - -	Hendre Ddu -	Dolyddelen, near Llanrwst.	Owen Parry.
4. James Gould Cooper, Manchester - -	Penllyn - -	Ditto - -	Wm. Owen.
5. Port Penrhyn Slate Co., Limited - -	Port Penrhyn -	Llanllechid, Bangor	Geo. J. White.
6. Rhiwbach Slate Co. - - -	Rhiwbach (New Vein)	Penmachno, Four Crosses.	*Jas. S. Tuxford.*
7. South Snowdon Slate Co. - -	South Snowdon -	Hafod y Llam, Beddgelert.	Pierce Davies.
Denbighshire.			
1. Rhiwgoch Slate Quarry Co. - - -	Rhiwgoch - -	Pontypant, Dolyddelen.	D. E. Davies.

List of Mines in Mr. T. F. Evans' District, 1875—*continued.*

Owner or Company, and Postal Address.	Name of Mine.	Where situated.	Owner or Agent.
MERIONETHSHIRE.			
1. Robert Davies Price	Aberllefenny	Corris	David Jones.
2. Liverpool and Birkenhead Slate and Slab Co.	Braich Du	Trawsfynydd	Thos. Dodd.
3. Braich Goch Slate Quarry Co., Limited	Braich Goch	Corris	*Edw. Williams.*
4. John Hood & Co.	Brongronwy	Festiniog	Jas. Davies.
5. Abergynolwyn Slate Co., Limited	Brynreglwys	Near Towyn	Robt. Williams.
6. Carlyle Slate and Slab Co., Limited	Carlyle	Dinas Mawddwy	Thos. Forster.
7. Croesor New Slate Co., Limited	Croesor	Penrhyndeudraeth	Thos. Williams.
8. Cwmorthin Slate Co	Cwmorthin	Tanygrisiau	J. F. Sims.
9. H. N. Hughes and Nephew	Cymerau	Corris	David Owen.
10. Diphwys Casson Slate Co., Limited	Diphwys	Festiniog	Evan P. Jones.
11. Talyllyn Slate Quarries Co.	Gaewern	Corris	John J. Davies.
12. Union Slate and Slab Co., Limited	Great Moelwyn	Moelwyn Tanygrisiau, Festiniog.	*Geo. Potter.*
13. Sir Edmund Buckley, Bart., M.P.	Hendre Ddu	Dinas Mawddwy	Wm. Williams.
14. Samuel Holland, Esquire, M.P.	Holland's	Rhiwbryfdir	Rees Roberts.
15. John W. Greaves & Sons	Llechwedd	Rhiwbryfdir viâ Carnarvon.	*J. Ernest Greaves.*
16. Maenofferen Slate Co.	Maenofferen	Four Crosses	W. Owen.
17. New Rhosydd Slate Co., Limited	New Rhosydd	Tanygrisian	W. W. Morris.
18. North Wales Slate Co.	Park Slate	Penrhyndeudraeth	Wm. Kellow.
19. Rowlands and Hughes	Ratgoed	Corris	David Owen.
20. Rhiwbryfdir Slate Co., Portmadoc	Rhiwbryfdir	Rhiwbryfdir	*Mathew and Son.*
21. Thomas Mark Carter	Voelgron	East of Festiniog	Griffith Griffiths.
22. Votty and Bowydd Slate Quarries Co., Limited.	Votty and Bowydd	Four Crosses, Festiniog.	W. C. Walker.
23. Welsh Slate Co.	Welsh Slate (Palmerston).	Rhiwbryfdir	Robt. Owen.
24. Wrysgaen Slate Co.	Wrysgaen	Tanygrisian, Festiniog.	David Roberts.

Reports by Inspectors assisting.

S. B. GILROY, Esq.

SIR, Stone, 11th March 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I have the honour to report that during the past year I exercised the duties of Inspector of Mines in the district of North Staffordshire, Cheshire, and Shropshire, and that in so doing I acted as assistant to and under the directions of Mr. Thos. Wynne.

I have, &c.,
S. B. GILROY.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

JOHN L. HEDLEY, Esq.

SIR, 3, Elm Vale, Liverpool, 17th March 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of Inspector in the district of West Lancashire and North Wales, and that in so doing I have acted as assistant to and under the directions of Mr. Hall, the Inspector for that district.

I have, &c.,
JOHN L. HEDLEY.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

ARTHUR H. STOKES, Esq., F.G.S.

SIR, Derby, 29th March 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, and section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of Inspector of Mines in the Derbyshire, Nottinghamshire, Leicestershire, Warwickshire, Northamptonshire, and Oxfordshire district, and that in so doing I have acted as assistant to and under the directions of Mr. Thomas Evans, the Chief Inspector for that district.

I have, &c.,
ARTHUR H. STOKES.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

JOHN GERRARD, Esq.

SIR, Wakefield, 30th March 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of Inspector in the district of Yorkshire and Lincolnshire, and that in so doing I have acted as assistant to and under the directions of Mr. Frank N. Wardell, the Chief Inspector for that district.

I have, &c.,
JOHN GERRARD.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

W. GALLOWAY, Esq.

SIR, Cardiff, 23rd March 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I beg to report to you that during the past year I have exercised the duties of Inspector in the district of South Wales, and that in doing so I have acted as assistant to and under the directions of Mr. Wales, the Principal Inspector for that district.

I have, &c.,
W. GALLOWAY.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

JOSEPH S. MARTIN, Esq.

SIR, Prestwich, Manchester, 28th March 1876.

IN pursuance of the Coal Mines Regulation Act, 1872, and the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the past year I have exercised the duties of Inspector in the district of North and East Lancashire under the Coal Mines Regulation Act, 1872; and within the coalfield of North and East Lancashire, and in Cheshire and Sussex, under the Metalliferous Mines Regulation Act, 1872, with the Amending Act of 1875; also, Ireland under both Acts, and that in so doing I have acted as assistant to and under directions of Mr. Dickinson.

I have, &c.,
JOSEPH S. MARTIN.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

W. B. SCOTT, Esq.

SIR, Wolverhampton, 27th March 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I beg to report to you that during the past year I have exercised the duties of Inspector in the district of South Staffordshire and Worcestershire, and that in so doing I have acted as assistant to and under the directions of Mr. James Philip Baker, the Inspector for that district.

I have, &c.,
W. B. SCOTT.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

THOMAS CADMAN, Esq.

SIR, Newport, Mon., 1st April 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I beg to report to you that during the past year I have exercised the duties of Inspector in the South-western district, and that in so doing I have acted as assistant to and under the directions of Mr. Lionel Brough, the Inspector for that district.

I have, &c.,
THOMAS CADMAN.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

J. B. ATKINSON, Esq.

Ridley Mill House, Stockfield, Newcastle-on-Tyne,
1st April 1876.

Sir,

In pursuance of section 48 of the Coal Mines Regulation Act, 1872, and section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report to you that from the 1st January to the 31st August of the past year I exercised the duties of Inspector of Mines in the district of South Durham, Westmorland, and Cleveland, and that in doing so I acted as assistant to and under the directions of Mr. Bell.

On the 1st September 1875, with your sanction, I came to the Northumberland, North Durham, and Cumberland district, where I exercised the same duties during the remaining months of the year under the directions of Mr. Willis.

I have, &c.,
J. B. Atkinson.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

JOHN M. RONALDSON, Esq.

Pollokshields, Glasgow, 4th April 1876.

Sir,

In pursuance of section 48 of the Coal Mines Regulation Act, 1872, I beg to report to you that during the past year I have exercised the duties of Inspector in the district of West of Scotland, and that in doing so I acted as assistant to and under the direction of Mr. Alexander, the Inspector for that district.

I have, &c.,
John M. Ronaldson.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

W. N. ATKINSON, Esq.

Chilton Moor, Fence Houses,
6th April 1876.

Sir,

In pursuance of section 48 of the Coal Mines Regulation Act, 1872, and of section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the first eight months of the past year I exercised the duties of Inspector of Mines in the Newcastle district, and that in so doing I acted as assistant to and under the directions of Mr. James Willis. On the 1st September 1875, I came with your approval to the South Durham, &c. district, of which Mr. Thos. Bell is the Inspector in charge, as whose assistant I have since acted.

I have, &c.,
W. N. Atkinson.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State.
Home Department.

W. N. ATKINSON, Esq.

Chilton Moor, Fence Houses,
6th April 1876.

Sir,

I have the honour to explain that as in the last *two* years a form of report was issued from the Home Office for the Assistant Inspectors of Mines I was under the impression that it might be your intention to do so again. Now knowing that such is not the case, I will, in future, see to send in my annual report as early as it can possibly be required.

I have, &c.,
W. N. Atkinson.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

J. T. ROBSON, Esq.

SIR, Cambuslang, Glasgow, 6th April 1876.

IN pursuance of section 48 of the Coal Mines Regulation Act, 1872, I beg to report to you that during the past year I have exercised the duties of Inspector in the district of East Scotland, and that in so doing I have acted as assistant to and under the directions of Mr. Ralph Moore, the Inspector for the district.

I have, &c.,

J. T. ROBSON.

The Right Hon. R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
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For Her Majesty's Stationery Office.

MINES (FURTHER REPORT ON BLASTING POWDER).

COPY of further REPORT made by H. M.'s INSPECTORS of MINES relating to the use of BLASTING POWDER in FIERY MINES, the SECRETARY OF STATE for the HOME DEPARTMENT having referred back to them their COLLECTIVE REPORT of 1875 upon this subject in order that they might consider the propriety of Legislation, or of making general or special Rules. (In continuation of Parliamentary Paper, No. 417 of Sess. 1875.)

Presented to both Houses of Parliament by Command of Her Majesty.

WITH reference to Mr. Cross' letter of the 14th instant referring to the report of the Inspectors of Coal Mines of July last relating to the use of blasting powder in fiery mines, and requesting that the subject be again brought under the consideration of the Inspectors, and to furnish him with their opinion as to the propriety of further legislation, or the making of general or special rules to deal with the question of such use of powder in fiery mines:

After a long discussion of the subject a majority of the Inspectors were of opinion that some alteration of the law is desirable, but on endeavouring to determine what alterations should be made they could not agree as to detail.

The following two resolutions respectively were then agreed to by the Inspectors whose names are attached thereto.

First, Messrs. Wynne, Brough, Alexander, Moore, and Wardell are of opinion that explosives should be prohibited in mines where safety lamps are used, and that a short Bill should be introduced into Parliament to carry that into effect.

Second, Messrs. Dickinson, Evans, Willis, Wales, Bell, and Hall are of opinion that most of the explosions which have lately taken place are due to violation of the first general rule, want of discipline and precaution, and that in those instances where it is necessary to discontinue the use of powder there is adequate power under the present Act.

They give place to no one in their anxiety to lessen loss of life from explosions, but they find that in consequence of the wide difference in the circumstances of the inspection districts, and in the difference in the mode of working, system of ventilation, and discipline, it seems impossible for the Inspectors to hold a unanimous opinion upon the subject of recommending further restrictions as to blasting.

At present where the mine is so fiery that, notwithstanding adequate ventilation, the issue of gas at the point of emission is so strong as to show a blue cap in the safety lamp, the use of powder is prohibited under the 8th general rule unless the ordinary work persons are out of the mine, and further, that no shots shall be fired unless it is safe to do so. The judging of the safety of the place where the shot is to be fired may in the first instance have to depend upon the judgment of the "competent person" appointed for the purpose, but on its coming or being brought under the notice of the owner, agent, or manager, each of them becomes responsible for any contravention in this respect if it be continued.

JAMES P. BAKER,
Secretary Inspector for the Year.

38802.

[C.—1449.] *Price* ½*d.*

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

RETURN to an Address of the Honourable The House of Commons, dated 10 March 1876;—*for*,

COPY

OF

REPORT

OF THE

SWAITHE MAIN COLLIERY EXPLOSION.

SWAITHE MAIN COLLIERY EXPLOSION.

REPORT of Mr. *Frank N. Wardell.*

Sir, Wath, 7 February 1876.

I HAVE the honour to transmit, in accordance with your instructions, my report of the result of the inquest on those who were killed by an explosion of gas at the Swaithe Main Colliery on the 6th December last.

On receiving information on the morning of that day that an accident of considerable magnitude had occurred at Swaithe Main Colliery, I at once proceeded there, and found that an explosion of gas had taken place, resulting in grievous loss of life.

When I ascertained the character and probable extent of the disaster, I communicated with you, and you directed my colleague, Mr. Evans, to assist me in making the necessary investigations, and, further, instructed Mr. Maule, Q.C., to attend at the inquest and watch the proceedings on behalf of the Crown.

The colliery at which this explosion occurred is one of three contiguous to each other, all belonging to Messrs. Mitchell & Co. Between two of these three—Edmund's Main and Swaithe Main—there is direct underground communication, although the ventilation of each is almost entirely separate and distinct. The seam which is being worked is the "Barnsley;" Swaithe Main Colliery is ventilated by means of a furnace, a tube or chimney from which passes for some distance up the shaft, the return air not being taken directly over the flames, but ascending the shaft outside this tube.

The difficulty in restoring the ventilation, and recovering the bodies, the necessity for extinguishing the furnace, and subsequently re-lighting it, all furnished strong proofs of one of the superiorities of mechanical ventilation where an uniform current of air could without danger have been maintained.

I was accompanied in my inspection of the mine, which was made so soon as practicable, by Mr. Evans, my assistant Mr. Gerrard, the manager Mr. John Mitchell, and several mining engineers, also by the president and secretaries of the South Yorkshire Miners' Association.

The explosion had not affected the workings on the "rise" side of the pit, between Swaithe and Edmund's Main, but was confined to the lower or "dip" side of the shaft, and in this district were evidences of at least two explosions. It seemed to me that the gas was first ignited in a district known as the "slant

drift level" district, that it had thence passed along the "slant level," across the engine plane, and fired more gas in a large "goaf" in "Briggs' siding," causing a second and very violent explosion. From this point the direction was upwards to the "boundary bord," and also through the large "goaf" to the low workings in "No. 4 level" and "No. 4 drift level," where another explosion may have taken place, evidences of violence being around here also very apparent. The direction taken by the blast along the "boundary bord" was to an "overthrow," which was blown down, and hence through the stables to the shaft, doing considerable damage to the cages and conductors.

All the evidence I saw led me to believe that the direction of the explosion was as I have thus described, and the descriptions given by witnesses at the inquest confirmed my opinion. Blasting was allowed in certain parts of the mine, and locked safety lamps were exclusively used.

For many days after the explosion it was impossible, owing to the uncertainty which existed as to the exact number of persons who had been in the mine at the time, and to the difficulty in recovering the bodies, to ascertain correctly the full extent of the calamity; it is now, however, known that the total number of lives lost is 143.

The inquiry held before the Coroner, Thomas Taylor, Esq., at Barnsley, was of a most searching and full character, and I do not believe that at its close there could have been a particle of evidence adduced which would in any way have thrown light upon the cause of the explosion, or its consequences. The exceptional measures, taken by your instructions in order to insure a complete investigation into the causes of the calamity, helped to lead to this result; and these measures were ably seconded and supported by all who were engaged on the inquiry. It is to be deeply regretted that beyond the main facts of an explosion of gas having taken place, and a certain number of persons having been killed, nothing could be elicited which actually proved *where* or *how* the explosion occurred, so that the actual cause of the disaster must remain a matter of conjecture and opinion. All who might have been able to afford any positive information were swept away.

Much, however, was brought to light which indicated a marked laxity of discipline in the mine, more especially with reference to the use, or abuse, of gunpowder; and because all such matters as inattention to rules and absence of discipline, one and each contribute to produce disasters such as this (and minor ones as well), such defects as were pointed out may be remedied in the future, and the lesson, though dearly bought, may not be without its salutary effect throughout the district.

It is not my opinion that in this instance the gas was ignited by the firing of a shot; but this does not in the least weaken my convictions, so repeatedly expressed, that gunpowder should not be used in the Barnsley and Silkstone seams. I prefer to express myself so, rather than to say, in mines where safety lamps are used, for it has been suggested to me that were such a regulation enforced at some mines where safety lamps are now used in conjunction with powder, the former would be removed; but I am very unwilling to believe that any owners or managers of such mines, with the experiences we have had in this district, would incur the enormous responsibility of taking such a step.

Although, then, this explosion may not have been directly caused by the firing of a shot, my opinion as to the increase of safety by discontinuing the use of powder is *strengthened*, for, with gas in the mine (and whether the gas was given off suddenly, or whether it had been gradually accumulating in the "goafs," still at the time of the explosion, it was there), and at the same time a naked light (which when produced by shot-firing is of a specially dangerous form), there are the two elements necessary to produce an explosion co-exist, and only waiting to be brought into contact.

Whether, then, the firing of a shot at Swaithe Colliery caused the explosion or not, there, at all events, was existing such a condition of affairs as that this *might* have so resulted, and therefore it is in the highest degree important that by the discontinuance of blasting in those mines where gas is known to exist, *one* source of danger, at all events, would be removed.

The Barnsley and Silkstone seams are well known to be of a fiery nature; gas is constantly being given off. Sometimes, it may be, liberated suddenly, as has been the case at some of the collieries in this district, when, owing to the exclusive use of the Stephenson lamp, and the absence of powder, terrible disasters

disasters have been averted; and sometimes, perhaps, through defective ventilation, or an improper judgment in the distribution of the air, allowed to accumulate, and gradually to become so diffused with the atmosphere as to render it ready for the first opportunity which may offer for its ignition; and this opportunity may be caused also, not only by a naked light (which includes defective safety lamps) being actually *taken into* the explosive compound, but also by the gas being *expelled* from its possibly unobserved position by some circumstance connected with the ordinary working operations of the mine; for instance, any slight derangement of the ventilation occasioned by a fall, or the opening or shutting of some door, or the concussion produced by the firing of a shot, may each and all effect this. In this last-mentioned cause another reason is apparent why gunpowder should be abandoned, for it may clearly, if it be not the *primary* cause, produce an explosion indirectly.

I have for many years strongly advocated the discontinuance of gunpowder in these seams, and each year strengthens my conviction that I am right in so doing. The introduction exclusively of safety lamps also was, and is, a matter I have ever pressed most seriously on the attention of owners and managers, and I am thankful to say that at almost every colliery where these seams are worked safety lamps are now generally adopted, they having been within the last two years alone, introduced at ten or twelve of the largest and most important mines. The use of gunpowder is gradually decreasing, and there really seems to me to be no reason, beyond what would be matters of arrangement or contract between masters and men, why, if certain mines can be worked without it, the remainder, working identically the same seams, under similar conditions, cannot also dispense with its operation. I am convinced that the total abandonment of gunpowder in these mines would certainly remove *one* of the causes which contribute to produce such calamities as that at Swaithe, and hence we might fairly hope and expect, produce a proportionate diminution in the list of fatalities.

The use or partial use of powder having been allowed at Swaithe Main, it simply then became the duty of all to see that those rules affecting its operation were stringently observed. This, however, does not seem to have been the case. Gas had repeatedly been found and reported in various parts of the mine, and for weeks before the explosion almost daily, and yet powder was taken down loose in canisters, and not, as required, in cartridges. Some of the canisters, too, were capable of containing more than 4 lbs., which is the maximum quantity prescribed by the Act to be taken into a mine by one person. There was also an absence of *system* as to the account kept of powder used in the mine. It was possible for the men to purchase it in Barnsley or elsewhere than at the colliery company's storehouse, and take it down with them without rendering any accouut of it at all, and in some instances this was done. Some of the districts which are assigned to the deputies are, in my opinion, too large. A deputy holds a most important and responsible position, and it is absolutely necessary that his district should be of such limited size as to be under his control. Physically speaking, it is impossible that a careful examination can be made when this is not so.

The distribution of air in the dip workings is, in my opinion, capable of considerable improvement, and the mode of working all round large "goafs" is highly objectionable. The air, as at present conducted, passes from "No. 5," for instance, to the working places in "No. 3," taking with it any gases which may have been given off. And so in "No. 2" district as regards the "slant level" and the "slant drift level" workings, alterations could easily be effected which would give to each district a supply of fresh air, and the consequent improvement would be very beneficial.

The lamps supplied to the deputies, or shot lighters, are Stephenson's, but are constructed so as to allow the glass cylinder to have an inch play within the gauze, so that by inclining the lamp the wire for firing the shot may be introduced through the gauze at the part which is then unprotected by the glass. This, in fact, renders it a comparatively unsafe lamp, it being then a "Davy," *but* with a diameter of gauze exceeding that which is considered to be the maximum compatible with safety in a "Davy" lamp. The most experienced and eminent engineers, I think, are agreed on this point, and I would mention two who, though now dead, their opinions are quoted as of the highest authority, Sir H. Davy himself and Nicholas Wood, Esq.

I have to say that I am exceedingly indebted to Mr. Evans for the painstaking assistance he has rendered me, and likewise to Mr. Maule for his valuable aid. To Mr. Gerrard my thanks are due for indefatigable help, to the coroner for the able conducting of the inquiry, and to Mr. Sykes, the superintendent of police, for the way in which he assisted in obtaining and preparing evidence, and I may add, that all facilities were readily afforded my colleagues and myself in our investigations, by the proprietors and the manager.

The verdict returned by the jury was to the following effect:—

"The deceased came by their deaths at the Swaithe Main Colliery, on 6th December 1875, by an explosion or explosions of fire damp, but how such explosion or explosions originated there is not sufficient evidence to show. The jury are likewise of opinion that according to the evidence the Swaithe Main is a fiery mine, and that the general and special rules of the colliery have not been rigidly carried out, and that gunpowder had been recklessly used. The jury are also of opinion that in a mine where safety lamps are used, the use of gunpowder should not be allowed, except in stone drifts, and then only when all miners are drawn out. The jury desire the coroner to forward this opinion to the Secretary of State. They also regret that the miners have not carried out rule 30 (which gives them power to examine mines), and they think that this rule should be more directly adhered to."

It is with much sorrow I have to add that the principal proprietor of the colliery, Mr. Mitchell, has died since the explosion, and also, that death has carried off Mr. Normansell, one of the miners' secretaries, who accompanied my colleagues and myself in our examination of the mine. It is more than probable that trouble and anxiety, occasioned by the deplorable calamity, hastened the end of both.

I have, &c.
(signed) *Frank N. Wardell.*

The Right Honourable R. A. Cross, M.P.,
Her Majesty's Principal Secretary of State.

REPORT of Mr. *Thomas Evans*, Inspector of Mines.

Sir, Derby, 7 January 1876.

I HAVE the honour to acknowledge the receipt of your letter of the 20th of January, requesting me to furnish a report in regard to the recent explosion of gas at the Swaithe Main Colliery.

2. On the 8th of December last, I received your instructions to attend and act in concert with my colleague, Mr. Wardell, at the inquest on the bodies of the persons killed by the explosion which took place on the 6th of December.

3. The Swaithe Main Colliery is situated about four miles from Barnsley, and is contiguous to the Edmunds and the Mitchell Main Collieries, all belonging to Messrs. Mitchell, Bartholomew, and Tyas, and all working the well-known Barnsley bed of coal.

On the 14th and 15th of December, I assisted the inspector of the district in making an examination of the underground workings, lying to the deep of the downcast shaft; in fact, that part of the mine where the violence of the explosion exhibited itself.

5. We were accompanied by Mr. Gerrard, the assistant inspector of the district, Messrs. T. Jeffcock, Mammatt, Thompson, mining engineers, several underviewers from neighbouring collieries, Mr. John Mitchell, the manager (holding a certificate), and Messrs. Normansell, Frith, and Capey, representing the miners.

6. I was present at the coroner's inquest during the whole of the seven days, rendering the best assistance in my power to Mr. Wardell and Mr. Maule, Q.C., in laying before the coroner and his jury all the evidence it was possible to obtain, which could throw any light as to the cause of this deplorable and very serious loss of life.

7. From

7. From my inspection of the mine, and a most careful consideration of the facts brought out in evidence, I am of opinion that there must have been two or more explosions of gas immediately following each other, the first taking place in one of the working places in the North slant level, and another at Brigg's siding at the top of the 12-acre goaf, and it is probable that the flame in passing along from extreme northern to the southern workings, ignited some gas which lodged along the gobs.

8. It is impossible to fix on the exact spotwhere the gas was actually fired, for in the slant drift level, and around the 12-acre goaf, all were killed, and the persons who witnessed the origin of the explosion must soon have been in the midst of flame, and instantly perished.

9. This is a locked lamp colliery, and with the exception of about 24 Clanney lamps (carried by persons employed on the main intake airways), Stephenson's were used.

The glasses in the lamps used by the deputies and shot firers were an inch too short. They were purposely made in this way, so as to enable the shot firer to insert a fine wire through the gauze into the flame whilst the lamp was held in an inclining position. These I consider to be imperfect lamps, not so safe as the ordinary Stephenson or the Davy.

10. Stephenson's lamps are by many of the engineers of this district considered to be safer than any other, especially in the hands of the miners, as in most cases the presence of gas extinguishes the flame, and in this opinion I fully concur. One of the witnesses (Mr. Wilson, of the Oaks Colliery) went so far as to say that short glasses were as safe as proper fitting ones, and that the diameter of the lamp had little or nothing to do with its safety ; probably on reflection he will modify this opinion.

11. Whether the seat of the first explosion was in the slant drift level workings, or in Brigg's siding (at the top of the 12-acre goaf) is not a matter of much importance, but it is of vital consequence it should, if possible, be ascertained how it was that so much gas was present, and how and by what means it accumulated. There is not the smallest evidence to lead one to believe that any large quantity of gas was suddenly given off from the floor or roof, neither was there any " blower," but there is the fact that for weeks before the explosion the deputies report, day by day, the finding of gas in various parts of the colliery, and especially so in Brigg's siding at the top of the 12-acre goaf, and in the slant drift level workings.

12. The numerous goafs, or as they are locally called, " abandoned places," which are to be found throughout the mine, are large open canties, unventilated, consequently in course of time the gas which is liberated from the floor and roof, lodges in these open places, and when unusual disturbance takes place, the falling of the roof, the firing of shots, the opening and shutting of doors, &c., the gas is forced out, and at the first exposed light, an explosion is the inevitable result.

13. The light, in this case, was probably a defective lamp.

14. It is true, tobacco pipes and a few lucifer matches were found in the pockets of some of the deceased, but there is not one bit of evidence to show that these things had anything whatever to do with the explosion; indeed the circumstances are wholly against such a proposition, for in the district where the explosion is supposed to have originated, the body of the deputy was found, and he most certainly would have prevented the use of matches, or the smoking of tobacco.

15. The discipline of the mine was certainly in a most unsatisfactory state. Rule 8, Section f, of the Mines Regulation Act, enacts, " That gunpowder shall not be taken into the mine, except in cartridges during three months after any inflammable gas has been found in any mine," and although gas was reported by the persons making the examination of the mine, yet they allowed the colliers to take loose powder into the mine; two canisters were found capable of holding a much larger quantity than the law directs.

16. The examination of the working places were not always made before the men descended the mine, and the report books were badly kept.

17. Blasting the coal was general throughout the colliery, except the north slant level workings, and shots had been fired on the south side not long before the explosion of gas. I do not, however, think they had anything to do with the immediate cause of the explosion. I must here state, that I quite agree with the observations made by my colleague, Mr. Wardell, that in the Barnsley and Silkstone seams of coal, which are said to be so fiery that they cannot be worked with naked lights, blasting the coal is attended with imminent danger, and the colliery owners, agents, and managers will incur a grave and most serious responsibility in continuing its use; there can be no good reason adduced in favour of the use of powder in a bed of coal eight feet thick; it is simply a question of arrangement between the owners and workpeople.

17. The total quantity of air passing through the mine was probably sufficient, if properly distributed, for the safe working of the mine under ordinary circumstances.

18. I now beg respectfully to state that in my opinion the real cause of the explosion is due to the system upon which the colliery has been worked—goafs in the midst of workings unventilated, and discharging gas into the main roadways (as, for instance, in the slant drift level and Brigg's siding), and often into the actual working places where men are engaged at their ordinary occupations; it is, however, right to mention that this mode of working has been practised in the district, I believe, generally. And although this explosion cannot be attributed to the use of powder, yet I think it absolutely necessary that in future the use of powder be discontinued, and locked safety lamps exclusively used; it is, however, more important that the system of working should be so arranged as that "so much of the mine must be kept ventilated as to render the working places and travelling roads safe."

I have, &c.
(signed) *Thomas Evans*,
Inspector of Mines.

The Right Honourable R. A. Cross, M. P.,
Whitehall, London.

REPORT of Counsel on behalf of the Crown upon the Result of the Inquiry before the Coroner.

5, Crown Office Row, Inner Temple,
January 1876.

Sir,

IN pursuance of your instructions in the matter of the inquiry by the Coroner into the cause of the deaths of the miners killed by an explosion at the Swaithe Main Colliery, on the 6th of December last, I attended that inquiry and watched the proceedings on the part of the Crown in concert with Mr. Wardell and Mr. Evans, and assisted in the endeavour to elicit the real facts of the case and the true cause of the accident. The evidence given before the Coroner as to the nature, extent, and cause of the explosion in the Swaithe Main Mine, which happened about half-past nine o'clock in the morning of that day, was commenced on Thursday, 16th December, and continued for five days. An adjournment at the end of that time became necessary, that the underground workings of the mine might be more thoroughly cleared, and the inquiry was resumed on the 13th January and ended on the following day.

2. A thorough examination of the mine has resulted in proving that the principal force of the explosion was first exerted in the lower or dip side of the workings, and was expended upwards and outwards towards the rise or top side.

3. It caused the deaths of 145 persons, whose destruction, with the exception of two or three, was instantaneous. The persons killed who were nearest to the full force of the explosion were severely burnt, those more remote from it perished only by suffocation.

4. In consequence of this loss of life, the direct evidence of any one who may have witnessed the origin of, and circumstances immediately accompanying, the

the explosion, could not be procured, and circumstantial evidence only, of what shortly went before or closely followed after the disaster, was all that remained as a guide to arrive at any conclusions.

5. The workings of the mine were divided into four districts, each one under the direction of a separate deputy during the day shift of eight hours, from six o'clock in the morning until two o'clock in the afternoon.

6. The duty of each of these four deputies was to examine his district twice during this day shift, and observe its safety as to ventilation and the presence of gases. These four districts were under two deputies during the night shift, each of whom examined two of the districts once during that shift for the like purpose.

7. The number of men and boys employed by the proprietors of the mine for the underground workings was 380 at the beginning of last December.

8. On the morning of 6th December 244 of the number went down into the mine between five and six o'clock, five of whom returned up before the explosion took place, 96 remained alive after it occurred, and 143 perished.

9. The second general rule of Section 51 of the "Coal Mines Regulation Act, 1872" (35 & 36 Vict. c. 76), requires that in every mine in which inflammable gas has been found within the preceding 12 months, once in every 12 hours if two shifts are employed during any 24 hours, competent persons, who shall be appointed for the purpose, shall, before the time for commencing work in any part of the mine, inspect with a safety-lamp that part of the mine and the roadways leading thereto, and shall make a true report of the condition of thereof, so far as the ventillation is concerned, &c. Every such report shall be recorded without delay in a book which shall be kept at the mine for the purpose, and shall be signed by the person making the same.

10. In accordance with this rule a book was kept at a place called the box-hole in the mine, in which reports were made by the deputies. These reports for the night shifts were entered each morning at five o'clock; and during the three weeks immediately preceding 6th December last they record "gas as having been found during the night examinations in three places in which the coal had been worked out, described in these reports as 'abandoned places.' In the last six reports for the nights ending Monday morning, 6th December, gas is also reported to have been found in a working place described as 'North B., No. 4 working place.'"

11. The reports of the day examinations for the same three weeks show that in the above "abandoned places" gas had also been found in the daytime, and that gas had been found in the above-named working place during the six days ending on and including Saturday, 4th December.

12. When this condition of the mine is found, the general rules of the statute above mentioned have provided that the use of gunpowder or other explosive or imflammable substance in a mine underground shall not be allowed during three months after any inflammable gas has been found in any such mine, except it be in cartridges, and be only thus used in the mine when a competent person appointed for the purpose shall immediately before firing the shot examine the place where it is to be used and the places contiguous thereto, who shall not allow the shot to be fired unless he finds it safe to do so, and then only under the direction of a competent person appointed for the purpose.

13. By these rules also, gunpowder is prohibited under any circumstances to be taken into the mine except in cases or canisters containing not more than four pounds weight, and no workman may have in use at one time in any one place more than one of such canisters.

14. Powder canisters were found by the explorers shortly after the explosion of the 6th December in several parts of the mine, including those in which the explosion had immediately and most violently exerted its force.

15. Of these canisters 14 had loose powder in them varying from three and a half pounds to half a pound in each, and three others were capable of holding five

pounds each, and one other six pounds, and which last did actually contain five pounds and a half.

16. The miners obtained the gunpowder for blasting either at the stores of the colliery kept by the proprietors for the purpose, or from shopkeepers at Barnsley. In the last case they are induced to procure it on account of the price being lower than that charged at the colliery stores.

17. When the colliery storekeeper sells powder to the miners their canisters are left with and filled by him, and he can thus limit the amount in each canister to that permitted by the above rules. When, however, a miner purchases from a shopkeeper, the storekeeper has no means of checking the amount taken by such miner into the mine.

18. The deputies of the underground districts have to see that the workmen when in the mine have no more powder in their canisters than is permitted by the rules, but there is no one whose duty it is to see that the rule respecting the introduction of gunpowder into the mine either in canisters or cartridges is obeyed by each miner just before he goes down.

19. It was expressly stated at the inquest on behalf of the manager, that he could not see to the observance of this rule by enforcing a system of search of each miner or of his canister immediately before his descent into the mine, as the workmen would refuse to submit themselves to this discipline.

20. Obedience to these important precautions in the use of powder was thus left entirely to each miner, subject to penalties that follow the detection of having disobeyed them.

21. Cartridges are not made up at the colliery stores ready for use in the mine, but cartridge papers are sold to the miners who are expected to make their own cartridges when that mode of introducing powder below is exclusively allowed by the general rule above referred to.

22. The storekeeper of the colliery had served out gunpowder in canisters on Saturday morning, December the 4th, to nine miners, amounting in the whole to 22 pounds, and again on Monday morning, December the 6th, before the explosion, 19 pounds of powder loose in canisters had also been served out to miners from the same stores.

23. The Stephenson safety lamp has, with a few exceptions, been solely used in the mine, the exceptions being a few Clanny lamps, which are modifications of the Davy lamp. The Stephenson lamp is a combination of the gauze wire cylinder of the Davy lamp, with an inner glass tube of equal height, both surrounding the flame, but the diameter of the gauze wire cylinder in the Stephenson has to be greater than that of the Davy to afford room within for the glass tube. Neither this wire cylinder nor the glass tube is moveable in this miner's lamp. But a variation of it, used only by the deputies, consists in the glass tube being one inch shorter than the length of the outer wire cylinder, by means of which difference the glass can be raised one inch and the flame thus uncovered by it. When so uncovered the flame is exposed to the outer air with the wire cylinder only interposed, of a diameter too large to make it a perfect protection. The object of thus uncovering the flame is to pass a wire through a mesh of the gauze cylinder and heat it for the purpose of shot firing. All these lamps were locked. Much difference of opinion was expressed by experienced witnesses as to the actual and relative degree of safety of some of these and of the Davy lamps, but a general opinion was held with regard to the deputy's short glass lamp that it was decidedly imperfect.

24. One of the special rules for the Swaithe Main Colliery made by virtue of the "Coal Miners Regulation Act," and which has the same force as if contained in that Act, provides that no person shall smoke tobacco, or take tobacco pipes or matches down pits which are worked with safety lamps; or shall have in his possession any lucifer match or any apparatus of any kind for striking a light.

25. An instance was afforded by the evidence at the inquest, of the security depending on the uncontrolled discretion of the miners in observing these rules,

rules, in the fact that in the pockets of the clothes of three men killed in the mine on the 6th December, were found three lucifer matches and three fusees, and on clothes of a fourth body were found a tobacco pipe and a small quantity of tobacco.

26. A similar instance was also given in relation to the special rule which directs that any person discovering a dangerous feeder or accumulation of gas must immediately give notice to the men and boys in that part of the mine, and to the underground viewer or the deputy, so that speedy measures may be taken to remedy the evil. It was proved that two miners, working in a dip-board of the part of the mine called the slant level, observed the presence of gas in that board on the 1st December last, from the effect produced by it on their lamps, about noon. Having removed their lamps to a distance, they shortly finished work, but neither of them gave notice of this appearance of gas to any one until the next day, when only they mentioned it to their deputy.

27. When the very serious dangers, which certain rules seek to avoid, can be prevented by a system of search of those persons for whom these rules are made, there is no sound reason to warrant the rejection of such a system.

28. It is well known that a like system is carried out in warehouses, docks, and dockyards in which valuable property is stored, but exposed to the depredations of workmen. How much more needed does this system become when applied to enforce rules, the violation of which may involve not merely loss of property, but the destruction of hundreds of human lives.

29. One of the special rules for the colliery generally provides, that the manager, underground viewer, and deputies, shall have control over all persons employed, and the latter must obey their lawful commands in accordance with the Act and special rules, and reports are to be made to the manager by deputies of violations of rules, that steps may be taken to insure discipline throughout the works.

30. It is further enacted by the 31st general rule of the "Coal Miners' Regulation Act, 1872," that every person who contravenes or does not comply with any of the general rules in Section 51 (including the manner of using gunpowder), shall be guilty of an offence against the Act, and in the event of any contravention of, or non-compliance with, any of the said general rules in the case of any mine to which the Act applies, by any person whomsover, being proved the owner, agent, and manager, shall each be guilty of an offence against the Act, unless he proves that he had taken all reasonable means by publishing, and to the best of his power enforcing, the said rules, as regulations for the working of the mine, to prevent such contravention or non-compliance.

31. It might be very difficult effectually to bring this enactment to bear upon omissions imputed to the owner and manager, still it is a point for decision how far the manager may be held not to have taken all reasonable means, and to the best of his power, of enforcing the rules which have clearly been shown to have been disobeyed by the miners as regulations for working the mine, by his neglecting to adopt a system of personal search of the workmen directly before they enter the mine, to prevent their contravening those rules which that system would enforce with certainty.

32. If it be true, however, that the miners as a body will resist the manager's control, by which he seeks to anticipate the breach of vital rules for their conduct, nothing is more easy than that the miners should appoint for themselves some of their own members to carry out a system of search, by means of which the lives of all would be made less subject to the reckless conduct of those amongst them who defy obedience to essential discipline.

33. From the manner in which some of the rules framed for securing safety have been carried out, it would seem that they have overtaxed the ability of those in authority, to whom the duty of enforcing them has been confided.

34. The dangerous nature of the seam of coal of the Swaithe Main Pit, arising from gas, was known to the proprietors, and in one part of the mine, called the "slant drift level," this danger had been so manifest that 12 months

 before

before December last, it had been resolved by the manager and underviewer that no shot-firing should be permitted in that part before two o'clock in the afternoon, at which hour the workmen of the day shift left the mine.

35. In all other parts of the mine shot-firing was permitted and practised while the men were working below; such a shot had been fired in a working place at the bottom of the engine plane half an hour before the explosion happened.

36. The places that have been worked out called goafs, are not subject to the system of the ventilation, and are not capable, as it is said, of being made so. Their atmosphere, however, is open to that of the rest of the mine, and they are liable to become reservoirs of accumulated gas.

37. Any disturbance within them by a fall of roof or like accident, or by the vibrations caused by shot-firing, may drive their contents into the neighbouring working places and passages of the mine, and in such an occurrence if they should contain gas, it escapes into the contiguous working places, where it comes in contact with lamps or lights employed in blasting.

38. With such conditions to which this mine has been exposed, it would have been wise to have prohibited shot firing in every part of it during hours that the shifts were down at work.

39. Adjacent to the place in the mine where the shot was fired, half an hour before the fatal explosion, there was a large unventilated goaf of 12 acres in area, from which by manifest traces observed, a very violent force of exploded gas had proceeded and spread destruction to life, and to the workings next and near it.

40. It is certain that a large body of gas must also have been collected in that part of the mine already referred to, called the "slant drift level," in which, close adjoining the working places, was a goaf, where gas had been reported from time to time during three weeks preceding the explosion, and here on the morning of the 6th December it had ignited. In this last district the force of the explosion had been exceedingly violent, and the traces of it indicated that here, most probably, was the seat of its origin. Within short distance of the centre of this force were found 10 out of 22 damaged lamps, brought out of the mine after the disaster, and near this same spot the body of the deputy of this district and his damaged lamp were lying. It is one not unlikely cause that may be suggested, that by some displacing of the short glass tube of his deputy's lamp, when examining this place, access for gas was given to the flame by which the explosion was produced that spread thence into the other districts of the mine. This is however but a theory consistent with the evidence of the explorers.

41. Of any of the ways, however, by one of which the gas must have been ignited, no evidence has pointed to which one the explosion can be attributed.

42. It can only have been caused either by some rapid rush of gas through a perfect safety lamp not sufficient to extinguish it at once, or by the flame of a lamp accidently broken, or by a lucifer match or fusee kindled contrary to rules, or by the flame of a shot fired, or by the slipping up of the glass tube, and exposing the flame of a deputy's lamp.

43. In the absence of any proof to point to which of these the disaster could be traced, the coroner's jury returned, on this point, an open verdict.

44. It is an obvious conclusion, to which this inquiry leads us, that the rules that exist to control the conduct, and secure the highest amount of safety to life, of those employed in the underground workings when a colliery is affected by dangers of a fiery seam, have been left for their observance too much to the independent wills of the many who have to obey them, without a stringent superintendence of a superior authority to all, exercised with very peremptory powers.

45. No slight penalties for disobedience serve adequately to enforce law, when its violation ends in disasters that lie beyond the reach of remedy or redress.

redress. Where dangers of the highest degree and gravest consequences are daily dealt with, there a discipline of the highest stringency should be put in force.

46. Such a discipline must be known and practised in powder mills, where otherwise explosions would be constant; yet these consequences can there be largely mitigated by restrictions upon the amount of explosive matter within the mills. In a mine, however liable to accumulation of gases, no such restriction upon the amount of such explosive matter is in the power of managers, and this greatest danger seems to call for so much the greater and more unceasing precautions.

The government of a mine thus exposed to explosions should be as strict, and obedience as much exacted, as on board a man of war.

I have, &c.
(signed) *J. B. Maule*, Q.C.

A. K. Stephenson, Esq.,
Solicitor for the Affairs for Her Majesty Treasury,
Whitehall.

COPY

OF

REPORT

OF THE

SWAITHE MAIN COLLIERY EXPLOSION.

(*Sir Henry Selwin-Ibbetson.*)

Ordered, by The House of Commons, *to be Printed,*
13 *March* 1876.

99. *Under* 1 *oz.*

553

FURTHER RETURN to an Address of the Honourable The House of Commons, dated 10 March 1876;—*for*,

COPY

OF

REPORT

OF THE

SWAITHE MAIN COLLIERY EXPLOSION.

DEPOSITIONS.

(*Sir Henry Selwin-Ibbetson.*)

Ordered, by The House of Commons, *to be Printed*, 20 *March* 1876.

99—I.

SWAITHE MAIN COLLIERY EXPLOSION.

DEPOSITIONS

(IN THREE PARTS).

PART 1.

7th December 1875.

INFORMATIONS of WITNESSES severally taken on Oath on behalf of our Sovereign Lady the Queen, touching the death of each of the 15 persons hereinafter mentioned; that is to say, James Blackburn, George Evans, James Allan, James Denton, Walter Whitham, Thomas Markey, William Laughton, William Henry Bailey, Thomas William Senior, William Charles Tyas, William Greenbank, Richard Smith, Charles Harrison, William Bray, and Levi Thickett, at the house of Zillah Oxley, known by the sign of the "Masons' Arms," in the township of Worsbrough, in the parish of Darfield, in the Liberty and Franchise of the Honor of Pontefract, in the West Riding of the county of York, on the 7th day of December in the 39th year of the reign of our Sovereign Lady Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, before me, Thomas Taylor, Esquire, one of the Coroners of our said Lady the Queen, for the said County, and also for the said Honor, on an Inquisition then and there taken on view of the body of each of the said 15 persons then and there lying dead within the jurisdiction of the said Coroner, as follows, to wit,— 7 Dec. 1875.

Mary Ann Blackburn, of King-street, in Barnsley, in the said honor and county, widow, on her oath, says: the deceased James Blackburn was my husband. He was 44 years old, and a colliery underground labourer. He left home, as usual, about five minutes before 5 o'clock yesterday morning. I saw his dead body about half-past 1 o'clock this morning at Swaith Main Colliery. He was in the Odd Fellows Club. He had only worked three years in a colliery.

Mary Ann Blackburn (her × mark).

Edward Jones, of Park-row, in Barnsley, aforesaid, check weighman at Oaks Colliery, on his oath, says: I have known the deceased George Evans for many years. He was 17 years old, and a hanger-on at the bottom of a jenny in a colliery, and a son of George Evans, a coalminer, deceased. I saw him last Saturday. He lived with his mother in Baker-street.

Edward Jones.

Henry Wood, of the Park, in Worsbrough, aforesaid, colliery banksman, on his oath, says: I have been acquainted with the deceased James Allan for nearly four years. He was 35 years old, and an underground viewer at Swaith Main Colliery. I took tea with him last Sunday evening. I saw his body at the colliery this afternoon. I have also been acquainted with the deceased James Denton for the last four years. He was 32 years old, and a coalminer. I saw him last Sunday afternoon, and his body this afternoon.

Henry Wood.

George Saddler, of Rockley, in Worsbrough, aforesaid, shot lighter in a coal pit, on his oath, says: I have known the deceased Walter Whitham for the last nine years. He was 19 years old, and the son of John Whitham, a linen power-loom weaver. Deceased was a hurrier in a colliery. I saw him alive last Saturday night, and dead about 9 o'clock this morning.

George Saddler (his × mark.)

William Roobottom, of Worsbrough Common, in Worsbrough, aforesaid, clerk to the Miners' Association, on his oath, says: I have been acquainted with the deceased Thomas Markey for the last four years. He was 25 years old, and a coalminer. I saw his dead body this morning by the side of the bodies of James Blackburn and James Allan.

William Roobottom.

Adjourned to the Courthouse in the township of Barnsley, aforesaid, on Thursday next, the 9th day of December in the said year, at half-past 11 o'clock in the forenoon. Jurors bound in 20 *l.* each.

At the said last-mentioned place and time, the inquiry was further adjourned until 1 o'clock in the afternoon of the same day, to be then held at the "Masons' Arms," aforesaid. Jurors bound in 10 *l.* each.

9 Dec. 1875.

9th December 1875.

INFORMATIONS of WITNESSES severally taken on Oath on behalf of our Sovereign Lady the Queen, touching the death of Andrea Konuck at the Courthouse, in the Township of Barnsley, in the Parish of Silkston, in the Liberty and Franchise of the Honor of Pontefract, in the West Riding of the County of York, on the 9th day of December, in the 39th Year of the Reign of our Sovereign Lady Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, before me, Thomas Taylor, Esq., one of the Coroners of our said Lady the Queen for the said County, and also for the said Honor, upon an Inquisition then and there taken on view of the body of the said Andrea Konuck, then and there lying dead within the jurisdiction of the said Coroner, as follows, to wit,—

Charles William Bass, of Barnsley aforesaid, surgeon, on his oath, says: I am the resident house surgeon at Beckett's Hospital and Dispensary. Last Monday afternoon, about half-past one o'clock, deceased was brought to the hospital. He was suffering from shock occasioned by compound comminuted fracture of the right leg, and a large wound on the left buttock, three or four cuts on the head, and various bruises over the body. His face and hands were burnt, but not seriously. He was in a semi-conscious state. He died at 10 minutes past three o'clock the same afternoon from the shock. He had lost a good deal of blood.

(signed) *Charles William Bass.*

Taken on oath, and acknowledged, before me,

Adjourned to the house of Zillah Oxley, the "Masons' Arms Inn," in the township of Worsbrough, in the parish of Darfield, in the honor and county aforesaid, at one o'clock in the afternoon of this day. Jurors bound in 10*l.* each.

(Frank Newby Wardell, Esq., Inspector of Mines, attended the inquiry.)

INFORMATIONS of WITNESSES, severally taken on Oath, on behalf of our Sovereign Lady the Queen, touching the Death of each of the 109 Persons hereinafter mentioned; that is to say,—Thomas Bullock, John Waterworth, Henry Cawthorne, William Balmforth, John Stavosky, Ara Jera, John Gibson, Fred Kilner, Thomas Schorah, Charles Henry Collumbine, Alfred Crackles, Paul Kendell, William George Kendell, Paul Kendell, George Hampshire, Thomas Lockwood, Walter Lockwood, William Waller, Gad Barden, Arthur Dunk, Thomas Lund, Henry Grant, William Tyers, William Allen, Francis Allen, John Wood, Charles Henry Vine, George Phillipson, Alfred Bower, Edwin Bower, James McCullough, William Buckley, Israel Lambert, Joseph Knowles (*alias* Noble), Walter Goodliffe, Arthur Rock, John Henry Gilbert, George Beresford, William Rogers, Arthur Netherwood, Thomas Rider, James Barraclough, William Nettleship, Joseph Sheldon, Sam Green, Joseph Benson (*alias* Joseph William Brown), Thomas Dowber, John Sedgwick, Benjamin Bennett, Robert Wilkinson, George Sykes, Edmund Semley, Amos Semley, Henry Marsden, Thomas Foster, John Goodall, John Christian, George Wildsmith, George Armitage, Alfred Hoyland, John Partlett, James Frederick Moore, Leonard Galloway, Frederick Galloway, Tom Watson, Joseph Watson, George Fawcett, John Semley, Alfred Gilbert, Joseph Dodson, William Hudson, Fred Holt Waldie, a Male Person at present unknown, John Pickering, John Calvert, William Earnshaw, William Brown, Charles Goodman, Edward Rose, Joshua Eyre, Thomas Woodhead, John Bailey, William Green, William Jenkins, William Oates, George Edward Carr, James Timperley, James Dolan, John Thomas Smith, Thomas Kilburn, Albert Edward Harrison, George Henry Slater, Henry Bell, Henry Malin, William Carr, Charles Morton, George Banks, Thomas Bever, Joseph Mowbray (*alias* Robinson), Henry Stott, Charles Hall, Joseph Harrison, Charles Taylor, Isaac Bullock, John Edward Phillips, James Muldoon, Edward Glover, John Nicholson, and Thomas Maltby, at the House of Zillah Oxley, known by the sign of the "Masons' Arms," in the Township of Worsbrough, in the Parish of Darfield, in the Liberty and Franchise of the Honor of Pontefract, in the West Riding of the County of York, on the 9th day of December, in the 39th year of the Reign of our Sovereign Lady Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, before me, Thomas Taylor, Esq., one of the Coroners of our said Lady the Queen for the said County, and also for the said Honor, on an Inquisition then and there taken on view of the body of each of the said 109 persons then and there lying dead within the jurisdiction of the said Coroner, and also at the said last-mentioned place and time, touching the death of each of the 15 persons then and there lying dead, by adjournment from the said "Masons' Arms" on the 7th day of December in the said year; and also touching the death of Andrea Konuck, by adjournment from the Courthouse, in the Township of Barnsley aforesaid, this morning, as follows, to wit,—

Mark Bullock, of Dale, in Worsbrough aforesaid, coalminer, on his oath, says: the deceased, Thomas Bullock, was my brother. He was 29 years old, and a colliery underground labourer. He lived with my mother and me. I saw him at Hoyle Mill, Ardsley, last Sunday night. I saw his dead body at Swaith Main Colliery last Tuesday evening.

Mark Bullock (his × mark).

Martha, the wife of James Best, of Summerlane, in Barnsley aforesaid, greengrocer, on her oath, says: the deceased, John Waterworth, lived with us six years before he was married, 10 years ago. He came to our house last Sunday night to his tea. He was 30 years old, and a deputy in a colliery. I saw his dead body last Tuesday night at the Swaith Main Colliery.

Martha Best.

William Cawthorne, of Worsbrough Common aforesaid, hurrier in Swaith Main Colliery, on his oath, says: the deceased, Henry Cawthorne, was my brother. He was 22 years old, and a breaksman on an incline in the colliery. I lived with him, and saw him at home last Sunday night. I saw his body at the colliery last Tuesday night. I hurry for William Foster, from the Swaith Levels. I went in with him about half-past five o'clock last Monday morning. On reaching the bank we found the stone from the roof had come down over the props, and we came out about a quarter past nine o'clock. I saw Waller, who is a "Tommy off o't'road." I did not hear any shot fired.

William Cawthorne.

John Hillsley, of Staveley, in the county of Derby, a deputy in a colliery, on his oath, says: the deceased, Charles Harrison, was my half brother. He was 13 years old, and a pony driver in a colliery, and a son of Charles Harrison, a coalminer, deceased. He lived with his step-father, the deceased George Beresford.

John Hillsley.

James Reader, of Worsbrough Dale aforesaid, coalminer, on his oath, says: I have known the deceased, William Balmforth, for the last eight years. He was 22 years old, and a colliery underground labourer. I saw him at Barnsley last Sunday night, and his dead body at Swaith Main Colliery last Tuesday night.

James Reader.

Thomas Reed, of Edmund's Main Colliery, in Worsbrough aforesaid, colliery timekeeper, on his oath, says: I have known the deceased, Andrea Konuck, for the last seven months. He was 33 years old, and an assistant hanger-on in a colliery. He was a Hungarian, and was married. I saw his dead body at Beckett's Hospital to-day. The deceased, John Stavosky, was another Hungarian, he was 44 years old, and an underground labourer. I saw him last Sunday night. He was married. I saw his dead body at Swaith Main Colliery about two o'clock this morning; it is dreadfully mangled. The deceased, Ara Jera, another Hungarian, was 29 years old, and an underground labourer. I also saw him last Sunday night. They lodged together, and I had to look after them. I saw Jera's dead body at Swaith Main Colliery about nine o'clock last night.

Thomas Reed.

John Senior, of Darfield aforesaid, colliery furnaceman, on his oath, says: I was at my work at Swaith Main Colliery until nine o'clock last Sunday night. The deceased, Thomas William Senior, was 17 years old, and a horse driver in the colliery, and my son. I called him up last Monday morning, and he set off to his work about a quarter-past five o'clock. I saw his dead body at the colliery last Tuesday. He was in the Miners' Association.

John Senior.

Israel Gibson, of Worsbrough Dale aforesaid, colliery underground labourer, on his oath, says: the deceased, John Gibson, was 14 years old, and a horse driver in a colliery, and my son. I saw his dead body this morning at Swaith Main Colliery.

Israel Gibson (his × mark).

William Kilner, of Worsbrough Dale, railway platelayer, on his oath, says: the deceased, Fred Kilner, was 14 years old and a colliery horse driver, and my son. I saw his dead body about half-past nine o'clock last Tuesday night at Swaith Main Colliery. 9 Dec. 1875.

William Kilner.

Sarah Schorah, of No. 5, Mitchell-street, Swaith, in Worsbrough aforesaid, widow, on her oath, says: the deceased, Thomas Schorah, was my husband. He was 31 years old and a colliery horsekeeper. He left home soon after four o'clock last Monday morning. I saw his dead body last Tuesday morning.

Sarah Schorah (her × mark).

James Collumbine, of Worsbrough Common aforesaid, colliery underground labourer, on his oath, says: the deceased, Charles Henry Collumbine, was my younger brother. He was 16 years old and a colliery hurrier, and the son of James Collumbine, a linen hand-loom weaver.

James Collumbine.

John Bulmer, of Union-street, in Barnsley aforesaid, packer in a linen warehouse, on his oath, says: the deceased, Alfred Crackles, was my brother-in-law, and lived at No. 33, King-street, in Barnsley aforesaid. He was 24 years years old and a coalminer. I saw his dead body last Tuesday night at Swaith Main Colliery. He was without any apparent injury. He was in the Odd Fellows' Club and the Miners' Union.

John Bulmer.

Thomas Smith, of Bacup, ironmoulder, on his oath, says: the deceased, Richard Smith, was my brother. He was 29 years old and a pit sinker. I saw his dead body yesterday morning about one o'clock at Swaith Main Colliery.

Thomas Smith (his × mark).

John Mc Quillan, of King Wellin, Worsbrough, aforesaid, colliery engineman, on his oath, says: the deceased Paul Kendell, was 45 years old, and a colliery underground labourer. The deceased, William George Kendell, was his son, and 17 years old, and a pony driver in a colliery. The deceased, Paul Kendell, was another son of his, 15 years old, and a pony driver. I saw them last Sunday. I saw their dead bodies last Tuesday at Swaith Main Colliery. The father is in the United Free Gardeners' Club, and the sons' lives are insured in the Prudential Assurance Office.

John Mc Quillan (his × mark).

Charlotte Hampshire, of Worsbrough Dale, aforesaid, widow, on her oath, says: the deceased, George Hampshire, was 58 years old, and a colliery underground labourer, and my husband. He left home last Monday morning soon after 5 o'clock, and I saw his dead body at Swaith Main Colliery yesterday afternoon. There does not appear to be any bruise about him.

Charlotte Hampshire (her × mark).

Anne Lockwood, of Worsbrough Common, aforesaid, widow, on her oath, says: the deceased, Thomas Lockwood, was my husband. He was 50 years

9 Dec. 1875. 50 years old, and a coalminer. The deceased, Walter Lockwood, was 16 years old, and a colliery hurrier, and my son. My husband left home about half-past four o'clock last Monday morning, and my son followed in about half-an-hour, My husband was in the Ancient Free Gardeners' Club, and my son's life is insured in Providential Assurance Company.

Anne Lockwood.

Robert Waller, of Worsbrough Common aforesaid, colliery underground labourer, on his oath, says: I went down Swaith Main Colliery last Monday morning about half-past five o'clock, and proceeded to Swaith Levels. About a quarter to ten o'clock I felt a wind, and heard doors bang; and then I and seven boys went out through the levels, and straight up Edmund's incline, and out through Edmund's main shaft. I saw nobody injured, and no stopping disarranged. The deceased, William Waller, was 16 years old, and a pony driver in the colliery, and son of Henry Waller, a linen hand-loom weaver, deceased. Deceased left home about five minutes before me. I saw his dead body brought out of Swaith Main shaft last Tuesday night. It is not burnt or injured.

Robert Waller.

Elizabeth Barden, of Worsbrough Dale, aforesaid, widow, on her oath, says: the deceased, Gad Barden, was my husband. He was 43 years old, and a colliery underground labourer. He set off to his work between five and six o'clock last Monday morning. I saw his dead body yesterday morning at Swaith Main Colliery. He is not disfigured.

Elizabeth Barden (her × mark).

Samuel Dunk, of Gold-street, in Barnsley, aforesaid, coal miner, on his oath, says: the deceased, Arthur Dunk, was my younger brother. He was 20 years old, and a coalminer, and the son of James Dunk, a coalminer. He is in the Royal Foresters' Club. The deceased, Thomas Lund, was my brother (half). He was 24 years old, and a colliery hurrier. My brother and I worked on different shifts, but in the same place. We were posting at the far end of the Slant level. I went down Swaith main shaft about ten o'clock last Tuesday night with my father. William Lomas, and three others, went together with us. Mr. Wilson followed us. We went on the slant to the bottom of our jenny, which is the far jenny on the slant. The air appeared to be all right. My father and James Farish went up to the "face." We found Arthur's body at the bottom of the jenny, about 140 yards from our working place. Thomas's body was four or five yards further up. Arthur's face was slightly scorched. Thomas was not in any way disfigured. Arthur had his lamp in his hand. It was uninjured. They had on their trousers and clogs only. There was a regular supply of good air to our place. The body of William Waller was found lying at the middle pass-by on the slant level, about 140 yards before we reached Arthur's body. A man's body was two or three yards before Waller's, and the bodies of two men were lying between Waller's and Arthur's bodies. We brought the bodies out as we found them. None appeared to be much injured. They were covered with dust. Henry Jaques was in charge of our district.

Samuel Dunk.

William Bailey, of Hoyle Mill, in Ardsley, aforesaid, colliery underground labourer, on his oath, says: the deceased, Henry Grant, lived at Hoyle Mill, and I began to lodge with him a fortnight ago. He was 35 years old, and a pit sinker. He left home about five o'clock last Monday morning. I saw his dead body at Swaith Main Colliery yesterday morning. The only mark to be seen about him is a scar on the cheek.

William Bailey.

Thomas Tyers, of No. 19, Pontefract-road, in Barnsley, aforesaid, pit sinker and furniture dealer, on his oath, says: the deceased, William Tyers, was my son, and lived at Cliff Bridge, in Monk Bretton. I saw him last Saturday night. He was 38 years old, and a pit sinker. He and Henry Grant were mates. I saw his dead body at Swaith Main Colliery yesterday morning. It does not appear to be injured.

Thomas Tyers.

John Richard Allen, of No. 35, King-street, in Barnsley, aforesaid, colliery hurrier, on his oath, says: the deceased, William Allen and Francis Allen, were my younger brothers. William was 19 years old, and a coalminer; and Francis was 18 years old, and a colliery hurrier, and the son of John Allen, farm labourer.

John R. Allen.

Henry Wilkinson, of No. 11, Pontefract-road, in Barnsley aforesaid, coalminer, on his oath, says: The deceased, John Wood, was my brother-in-law. He was 19 years old, and a horse driver in a colliery, and a son of John Wood, a letter carrier, deceased. Deceased was in the Miners' Union, the Royal Liver Insurance Company, and King William IV. Lodge of Odd Fellows. His face is badly burnt.

Henry Wilkinson.

Mary, the wife of *Henry Laughton*, of Whitecross, in Worsbrough aforesaid, farm labourer, on her oath, says: the deceased, Charles Henry Vine, has been lodging with us for the last 18 months. He was 20 years old, and a breaksman on an incline in a colliery. He left our house about half-past five o'clock last Monday morning. I saw his dead body at Swaith Main Colliery yesterday morning. It is much burnt on the face and body.

The deceased, *William Laughton*, was 17 years old, and a horse driver in a colliery, and my son. He left home with Vine last Monday morning. His body was found last Monday evening. He was burnt, and his arms and one leg were broken. He was insured in the Prudential Office.

Mary Laughton.

George Phillipson, of Wood-street (No. 61), in Barnsley aforesaid, labourer for the Corporation, on his oath, says: The deceased, George Phillipson, was 30 years old, and a colliery hurrier, and my son. He resided with me. He was a bachelor. He is in the Miners' Union and Foresters' Club.

George Phillipson.

Wright Bower, of Worsbrough Dale aforesaid, coalminer, on his oath, says: The deceased, Alfred Bower and Edwin Bower, were my sons.

Alfred

Alfred was 14 years old and a horse driver in a colliery, and Edwin was 12 years old and a pony driver in a colliery. Alfred is in the Miners' Union. They left home last Monday morning. I saw Alfred's body at Swaith Main Colliery on Tuesday night, and Edwin's body there yesterday morning. Alfred was very much bruised. I recognised him by his wearing a clog and a shoe. Edwin is very little injured.

Wright Bower.

Rowland Osbourn, of Worsbrough Common aforesaid, colliery underground labourer, on his oath, says: the deceased, James McCullough, was my brother-in-law. I saw him last Sunday evening. I saw his dead body yesterday morning about four o'clock, at Swaith Main Colliery. There did not appear to be any injury about it. He was 17 years old, and a horse driver in a colliery, and the son of James McCullough, a linen hand-loom weaver.

Rowland Osbourn.

Thomas Buckley, of Union-street, in Barnsley aforesaid, stonemason's labourer, on his oath, says: the deceased, William Buckley, was my brother. He was 33 years old, and a coalminer. I saw him last Sunday, and his body yesterday morning at Swaith Main Colliery.

Thomas Buckley (his × mark).

Sarah Lambert, of Mitchell-street, in Worsbrough aforesaid, widow, on her oath, says: the deceased, Israel Lambert, was my grandson and lived with me. He was 19 years old, and a colliery hurrier, and a son of Henry Lambert, a forgeman, deceased. He is in the Miners' Union.

Sarah Lambert (her × mark).

John Firth, of 54, Dale, in Worsbrough aforesaid, coalminer, on his oath, says: the deceased, Joseph Knowles, was my step-father. He was 38 years old, and a coalminer. I saw him last Sunday afternoon, and his body yesterday morning. The body was at Swaith Main Colliery, and appeared to be uninjured.

John Firth.

James Allen, of Ardsley aforesaid, colliery hurrier, on his oath, says: the deceased, Walter Goodliffe, was 22 years old, and a colliery hurrier. He married my sister. I saw him last Saturday at Barnsley, and his body yesterday morning at Swaith Main Colliery. He seemed to be asleep.

James Allen (his × mark).

Ann Rock, of No. 4, Wood-street, in Barnsley aforesaid, linen power-loom weaver, on her oath, says: the deceased, Arthur Rock, was 23 years old, and a coalminer, and my brother. I saw him last Saturday and Sunday. Yesterday morning I saw his body at Swaith Main Colliery. It was not disfigured.

Ann Rock (her × mark).

Mary Ann Gilbert, of No. 6, Mitchell-street, aforesaid, widow, on her oath, says: the deceased, John Henry Gilbert, was my husband. He was 20 years old, and a coalminer. He was in two clubs. His face is slightly burnt.

Mary Ann Gilbert (her × mark).

Hannah Beresford, of No. 6, Mitchell-street aforesaid, domestic servant, on her oath, says: the deceased, George Beresford, was my father. He was 53 years old, and a coalminer. He was a member of the Druids' and Foresters' clubs. I saw his dead body yesterday at Swaith Main Colliery. It was not at all disfigured. 9 Dec. 1875.

Hannah Beresford.

George Ball, of Hawthorn Cottage, Wombwell, in the parish of Darfield aforesaid, check weighman at Swaith Main Colliery, on his oath, says: The deceased, William Rogers, was my uncle, and I lived with him. He set off to work before I did last Monday morning. I saw his dead body when it was brought up yesterday morning about 10 o'clock. He was very little injured. About a quarter to 10 o'clock that morning I was under the Pit Hill, and heard a loud explosion, and saw smoke come up both shafts. I ran away. I was acting for the timekeeper that morning. Deceased was 32 years old, and a colliery hurrier.

George Ball.

George Guest, of No. 5, Wilkinson-street, in Barnsley aforesaid, coalminer, on his oath, says: The deceased, Thomas Rider, was my nephew. He was 16 years old, and a colliery hurrier, and the son of William Rider, a coalminer, deceased. I saw his dead body yesterday afternoon about half-past 12 o'clock, when it was brought out of Swaith Main Colliery. He was burnt a little, and was bruised about the hands.

George Guest (his × mark).

Theresa Netherwood, of Berry Row, in Worsbrough aforesaid, widow, on her oath, says: the deceased, Arthur Netherwood, was 16 years old, and a horse driver in Swaith Main Colliery, and a son of Charles Netherwood, a colliery hanger-on, deceased. Deceased left home about five o'clock last Monday morning. I saw his dead body at the colliery yesterday afternoon. His head was off. I recognised him by his stocking and a patch on his left ancle, which his clog had chafed.

Theresa Netherwood (her × mark).

George Barraclough, of Worsbrough Common, aforesaid, coalminer, on his oath, says: the deceased, James Barraclough, was my brother. He was 30 years old, and a colliery hurrier. I saw him alive last Sunday afternoon, and dead yesterday afternoon. He was burnt about the face. I saw him carried off the Pit Hill at Swaith Main Colliery. He was in a Secret Order and the Miners' Union.

George Barraclough.

Thomas Winder, of Broom Hill, in Wombwell aforesaid, cordwainer, on his oath, says: The deceased, William Nettleship, was my nephew. I was at Swaith Main Colliery last Tuesday afternoon about a quarter past six o'clock, when he was brought up the shaft and carried to the joiners' shop, where two or three doctors attended him. He died about 30 or 40 minutes afterwards. He was burnt about the body and the lower part of the face. He was 23 years old, and a coalminer.

Thos. Winder.

9 Dec. 1875. *John Allan*, of Swaith, aforesaid, shopkeeper, on his oath says:—The deceased, George Sykes, was 25 years old, and a horse driver in a colliery. I was formerly a coal miner. I returned from Barnsley last Monday afternoon, and went down Swaith Main Pit about half-past one o'clock with Messrs. Miller, Wilson, and others. I first went down the back travelling road to the new stables, and found all right. I then went through the bolt hole between the two travelling roads and returned up the engine plane to the pit bottom. On getting near the porch, I found a portion of the roof blown down. I then accompanied Messrs. Miller and Wilson down the back road again, and then down the engine plan to the half-way, where we found two men lying dead. We passed them, and went on to an overcast, and there were two other bodies, one being that of my brother James Allen, and the other that of Richard Smith. We went on further until we came to a fall of roof, and then we turned back, and looked into the stone drift where, with the exception of a stopping being blown out, all was right. A check sheet in the engine plane was standing, and the bodies of Paul Kendell and another man were close to it. A little further down the engine plane were two more bodies. At No. 4 Passby, which is lower down, we came to two men, one standing and another lying down. We took them in a corf to the pit bottom, and then I left and went with Henry Schorah to the old stables where the overcast was down and four horses were tied up and dead, and then I saw a boy named Tyas lying dead in a stall. I again went to the pit bottom, and afterwards returned to the old stables with Robert Schofield. Just through the stable at the jenny bottom, I saw Thomas Bullock lying dead, and just above him George Sykes was lying dead, about five yards above the head of a dead horse, which was not attached to any wagon. Sykes was on his side. His body was not brought out until Tuesday evening. I do not recollect having seen the deceased, Joseph Sheldon, last Monday. He was 43 years old, and a night deputy in the colliery. I saw his dead body laid in the store-room there this morning. He is without any mark of injury. I was down the pit twice yesterday.

John Allan.

Emma, the widow of *Sam Green*, of Platt's Common, in Hoyland, on her oath, says:—My husband was 27 years old, and a coalminer. He left home about 10 minutes past five o'clock last Monday morning. I saw his dead body at Swaith Main Colliery last Tuesday night, just after it was brought out. He does not appear to have any mark of violence about him. He is in the Miners' Union.

Emma Green (her × mark).

Rebecca, the wife of *James Benson*, of Stairfoot-in-Ardsley aforesaid, coalminer, on her oath, says:—The deceased, Joseph Benson (*alias* Joseph William Brown) was 13 years old, and a horse driver in a colliery, and my son. He set off to his work last Monday morning about 20 minutes past five o'clock. I saw his dead body at Swaith Main Colliery yesterday morning. He was burnt on the side of his face and on his hands. His life is insured in the Liverpool Legal Friendly Society's Office.

Rebecca Benson.

Elizabeth Dowber, of Worsbrough Dale aforesaid, widow, says:—The deceased Thomas Dowber was 24 years old, and a colliery underground labourer, and my husband. He set off from home a few minutes past five o'clock last Monday morning. Yesterday noon I saw his body being brought off the Pit Hill at Swaith Main Colliery.

Elizabeth Dowber (her × mark).

George Sedgwick, of King Well aforesaid, coalminer, on his oath, says:—The deceased, John Sedgwick, was my brother. He was 31 years old, and a coalminer. I saw his dead body at Swaith Main Colliery yesterday afternoon about one o'clock. He had on his clothes. He was burnt most on one side of his face. He was a member of the Miners' Union and a Secret Order.

George Sedgwick (his × mark.)

Thomas Bennett, of Hepworth, in the said West Riding, coalminer, on his oath, says:—The deceased, Benjamin Bennett, was my brother. He was 29 years old, and a coalminer. I saw his dead body yesterday afternoon, about three o'clock, when it was brought up Swaith Main shaft. He appeared to be uninjured. He was married, and has left a widow and three children.

Thomas Bennett (his × mark).

William Ibberson, of Worsbrough Dale aforesaid, coalminer, on his oath, says:—The deceased Robert Wilkinson, was 20 years old, and a colliery hurrier for John Sedgwick. He was my nephew. I saw him go down Swaith Main Colliery about half-past five o'clock last Monday morning. I did not hear or feel anything, as I was working in the Swaith Levels; but about 10 o'clock I was told to go out through Edmunds' Main Pit. I saw deceased's body yesterday afternoon, when it was brought out. It was burnt about the face.

William Ibberson (his × mark).

Adjourned until Thursday next, at Half-past Nine o'clock in the morning, at the Court House in Barnsley aforesaid. Jurors bound in 20*l.* each.

14*th December* 1875.

At the Court House aforesaid, on Tuesday, the 14th day of December 1875, pursuant to adjournment. 14 Dec. 1875.

Benjamin Semley, of Ebenezer-square, Dale, in Worsborough aforesaid, colliery assistant banksman, on his oath, says:—The deceased, Edmund Semley and Amos Semley, were my sons. Edmund was 17 years old; Amos was 14 years old. They were both horse drivers. I saw them getting their breakfast at home on the 6th instant, abont five o'clock. I saw their dead bodies on the 8th instant, at the Swaith Main Colliery. Edmund did not appear to be burnt; Amos was burnt on the hands and face.

Benjamin Semley (his × mark).

Ann Marsden, of No. 10, Tune-street, in Barnsley aforesaid, widow, on her oath, says:—The deceased, Henry Marsden, was my husband. He was 25 years old, and a coalminer. He left home about a quarter to five o'clock on the morning of the 6th instant, and I saw his dead body at Swaith Main Colliery yesterday. He was burnt about the face and body. I recognised him by his boots and socks. He is in a club and the Miners' Union.

Ann Marsden.

Bethia Foster, of Measborough Dyke, in Barnsley aforesaid, widow, on her oath, says:—The deceased, Thomas Foster, was my husband. He was 29 years old, and a colliery underground labourer. He left me on the morning of the 6th instant, about a quarter to six o'clock. Last Thursday morning I recognised his body by his trousers, singlet, and shirt. It was much burnt. He is in the Union and a club. The deceased, John Goodall, was my brother-in-law. He was 38 years old, and a colliery underground labourer. I saw him on the 4th instant, and his body last Friday. He was slightly burnt about the face.

Bethia Foster (her × mark).

James Berry, of Bacup, in the county of Lancaster, hawker, on his oath, says:—The deceased, John Christian, was 32 years old, and a colliery underground labourer. He visited me on the 27th ultimo, and remained until the 29th ultimo. Last Wednesday morning I saw his body at Swaith Main Colliery. He was burnt on his hands, but not on his face. He had not any broken bone. He is in the Miners' Association.

James Berry.

Hannah, the wife of *Joseph Wildsmith*, of Worsbrough Common aforesaid, liner handloom weaver, on her oath, says:—The deceased, George Wildsmith, was 19 years old, and a colliery hurrier, and my son. I saw him on the morning of the 6th instant before he set off to his work. His body was brought home yesterday. The left side of his face was burnt. He is in the Miners' Association.

Hannah Wildsmith (her × mark).

Andrew Squire, of Worsbrough Dale aforesaid, coal miner, on his oath, says:—The deceased, William Henry Bailey, was 20 years old, and a colliery underground labourer. He began to lodge with me about two and a half years ago. Last Wednesday morning I saw his dead body at Swaith Main Colliery, and I had it taken home. I helped to undress and lay it out. His face was slightly bruised, and he appeared to have black marks about his body.

Andrew Squire.

Henry Tyas, of Worsborough Common aforesaid, colliery underground labourer, on his oath, says:—The deceased, William Charles Tyas, was 20 years old, and a colliery underground labourer, and my son. I saw him about a quarter past five o'clock on the 6th instant, when he left home to go to his work. I saw his body on the following day at Swaith Main Colliery. He had a few slight scratches on the left side of his face. His life is insured in the Liverpool Legal Friendly Society.

Henry Tyas.

Rachel Crank, of King Well, in Worsborough aforesaid, widow, on her oath, says:—The deceased, William Greenbank, was 28 years old and a colliery underground labourer. He was my son-in-law, and lived with me. He set off to his work about a quarter past five o'clock on the 6th instant, and I saw his dead body the same day at Swaith Main Colliery. His right foot was off, and he was very much bruised all over his body. He is in a club.

Rachel Crank (her × mark).

John Armitage, of Worsborough Common aforesaid, clogger, on his oath, says:—The deceased, George Armitage, was 52 years old and a colliery underground labourer, and my father. I lived with him in Pensioner-row. He was brought home in the afternoon of the 6th instant. He was severely burnt all over his body. Mr. Blackburn attended him. Deceased gradually sank and died last Wednesday morning, about 25 minutes past five o'clock. He was in the Union.

John Armitage.

William Hoyland, of Worsborough Dale aforesaid, colliery hurrier at Swaith Main Colliery, on his oath, says:—The deceased, Alfred Hoyland, was 29 years old, and a coalminer. He was my brother. He was also an innkeeper, and kept the Manor House Inn. I saw him on the 5th instant, and his body last Wednesday afternoon. The body was lying at Swaith Main Colliery, and was burnt on the face and body. I recognised him by his boots and stockings. He was in the Free Gardeners' Club and the Miners' Association.

William Hoyland.

Emily Partlett, of Worsborough Dale aforesaid, widow, on her oath, says:—The deceased, John Partlett, was my husband. He was 19 years old and a coalminer. He left home about ten

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ten minutes past five o'clock on the 5th instant, and I saw his body at Swaith Main Colliery last Wednesday night. He was burnt about his forehead, body, and hands. He was in the New Ark Lodge of the Romans' Society.

Emily Partlett.

George Newell, of Mexborough, in the said West Riding, glassblower, on his oath, says:—The deceased, James Frederick Moore, was my brother-in-law. He was 26 years old and a colliery underground labourer. He visited me on the 5th instant. I recognised his body last Saturday morning at Swaith Main Colliery. He was badly burnt, and his right leg was broken. His shirt was burnt off. He is in the Foresters' Club.

George Newell (his × mark).

Ann, the wife of *John Galloway*, of Worsborough Common aforesaid, colliery underground labourer, on her oath, says: The deceased, Leonard Galloway and Frederick Galloway, were my sons. Leonard was 15 years old, and Frederick was 13 years old. Leonard was burnt all over, and bruised about the back of the head. Frederick was burnt all over, but not bruised. They are in the Gardeners' Brief.

Ann Galloway (her × mark).

Elizabeth Ellis, of Worsborough Dale aforesaid, widow, on her oath, says:—The deceased, Tom Watson, was 16 years old and a horse driver in a colliery, and my son by my late husband, Richard Watson, a coalminer, deceased. The deceased, Joseph Watson, was 19 years old and a colliery hurrier, and also my son. They both left me at five o'clock on the 6th instant. I saw Thomas's body last Thursday. It was burnt on the face. I recognised him by his garters, trousers, and belt. His life is insured in the Royal Liver Friendly Society, and in the Union. Joseph was in the same societies.

Elizabeth Ellis (her × mark).

Richard Fawcett, of Blacker Hill, in Worsborough aforesaid, colliery labourer, on his oath, says:—The deceased, George Fawcett, was 29 years old, and a colliery underground labourer. He was my brother, and was married. I saw his body on the 7th instant, at Swaith Main Colliery. He was burnt about the face. I owned him by his clothes. His life is insured in the Refuge Friendly Society, the Foresters Club, and the Miners' Association.

Richard Fawcett.

Thomas Semley, of Swaith, in Worsborough aforesaid, gardener, on his oath, says:—The deceased, John Semley, was 17 years old and a colliery horse driver, and my son. I saw him on the 5th instant at home. I recognised his body last Thursday noon. It was burnt and crushed. His clogs and feet were good to own. He was in a Dead Brief (Liverpool Victoria Legal Friendly Society).

Thomas Semley (his × mark).

Eliza Gilbert, of Worsborough Dale aforesaid, widow, on her oath, says:—The deceased, Alfred Gilbert, was my husband. He was 21 years old and a coal miner. He left me about 20 minutes past five o'clock on the 6th instant. I recognised his body at Swaith Main Colliery on the 8th instant. His face was badly burnt. I owned him by his boots and trousers. He was in a club at Mexborough.

Eliza Gilbert (her × mark).

George Dodson, of Blacker Hill aforesaid, colliery underground labourer, on his oath, says:—The deceased, Joseph Dodson, was 32 years old and a coal miner, and my brother. He lived at Blacker Hill. I owned his body last Wednesday noon at Swaith Main Colliery. He was burnt about his arms, and his face was scorched. He is in the Miners' Association and the Foresters' Club.

George Dodson (his × mark).

William Hudson, of Worsborough Common aforesaid, road labourer, on his oath, says:—The deceased, William Hudson, was 30 years old and a colliery hurrier, and my nephew. He was at my house on the 4th instant. I saw his body at Swaith Main Colliery on the 9th instant. His face was slightly burnt.

William Hudson.

Thomas Ellis, of Swinton, in the said West Riding, coal miner, on his oath, says:—Frederick Holt Waldie was my brother-in-law. He was 21 years old, and a colliery underground labourer. On the 5th instant I visited him at his mother's at Wombwell. Last Thursday evening I saw his body at Swaith Main Colliery. He was much burnt about the back of his head and body, but only scorched about the face. He is in the Miners' Association, the Odd Fellows' Club, and Wesleyan Reform Sunday School Brief.

Thomas Ellis.

Jacob Pickering, of Worsborough Dale aforesaid, coal miner, on his oath, says:—The deceased, John Pickering, was 23 years old, and a colliery underground labourer. He was my son. On the 6th instant, about three o'clock in the afternoon, he was brought to my house, 54, Dale. He was badly burnt on his hands, face, and neck. Dr. Heath attended him. Deceased was quite sensible. He said he had sat down with Woodhead, and two other labourers, to get breakfast, when he saw fire coming towards them. He said he was buried once, but got free, and kept going towards the shaft until he was rescued. He died last Tuesday evening about half-past eight o'clock. He was in the Odd Fellows' Club.

Jacob Pickering (his × mark).

Sarah Jane Calvert, of No. 35, Britannia-street, in Barnsley aforesaid, widow, on her oath, says:—The deceased, John Calvert, was my husband. He was 27 years old, and a coal miner. He set off to his work about 10 minutes to five o'clock on the 6th instant. I owned his body last Wednesday afternoon, at Swaith Main Colliery. He was burnt on his back and hands. His life was insured in the Royal Liver Friendly Society.

Sarah Jane Calvert.

George

George Joshua Earnshaw, of Mortomley Hill, in Ecclesfield, in the said West Riding, insurance agent, on his oath, says:—The deceased, William Earnshaw, was my brother. He was 32 years old, and a deputy in Swaith Main Colliery. He lived at Worsborough Dale. I saw his body last Wednesday at the colliery. He was wounded on the left side of his chest, and his hands were much burnt. His life was insured in the Gardeners' Society, the Miners' Association, and the Sunday School Union and the Deputies' Club.

George Joshua Earnshaw.

George Brown, of Stairfoot, in Ardsley, in the parish of Darfield, aforesaid, colliery underground labourer, on his oath, says:—The deceased, William Brown, was 19 years' old, and an incline boy in a colliery, and my son. He lived with me. I set off to my work at Darfield Main Colliery on the 6th instant, when deceased was sitting down to his breakfast. I saw him in the joiners' shop at Swaith Main Colliery about three o'clock in the afternoon. He was wrapt up in blankets and taken home in a cab. A surgeon accompanied him. Deceased did not speak until he reached home. He told me that he was seated at the half way, on the engine plane, and saw fire come straight across the board, and he forced his way through it, and that he was soon tired out and laid down until somebody reached him. He died last Tuesday afternoon, about a quarter to five o'clock. He was in a Brief.

George Brown (his × mark).

Henry Denton, of Swaith, aforesaid, colliery underground labourer, on his oath, says:—The deceased, Charles Goodman, formerly lodged with me. He was 19 years old, and a coal miner, and a son of Thomas Goodman, a farm labourer in Huntingdonshire. He was in the Foresters' Club. He was burnt about the face and arms. I owned his body at the colliery on Friday last. I identified his clothes. I was away from home on the 6th instant. I left on the 4th, and returned on the evening of the 6th instant.

Henry Denton.

Mary Ann Rose, of No. 23, King-street, in Barnsley aforesaid, widow, on her oath, says:—The deceased, Edward Rose, was my husband. He was 23 years old, and a coal miner. He set off to his work about 10 minutes past five o'clock on the 6th instant. I identified his body last Wednesday afternoon at Swaith Main Colliery. He was slightly burnt on the right side of his face, and badly burnt on his arms and chest. He was in the Refuge Friendly Society and the Miners' Association.

Mary Ann Rose (her × mark).

Elizabeth Eyre, of Worsbrough Dale aforesaid, widow, on her oath, says:—The deceased, Joshua Eyre, was my husband. He was 21 years' old, and a coal miner. He left home on the 6th instant, at half-past five o'clock in the morning, and I saw his body last Wednesday night at Swaith Main Colliery. He was burnt on the back of his head and one hand. He was in the Free Gardeners' Club, and the Miners' Union.

Elizabeth Eyre.

George Woodhead, of Round Green, in Worsbrough aforesaid, colliery underground labourer, on his oath, says:—The deceased, Thomas Woodhead, was my elder brother, and we lived together with my mother. He was 29 years old, and a colliery underground labourer. He went to work on the 5th instant, and said he was going to work double shift. I recognised his body at Swaith Main Colliery last Wednesday night. He was burnt about his hands and arms.

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George Woodhead.

William Taylor, of Hoyland Nether, in the said West Riding, iron puddler, on his oath, says:—The deceased, John Bailey, was 25 years old, and a coal miner, and my son-in-law. He was at my house on the 5th instant. I owned him at Swaith Main Colliery last Wednesday afternoon. He was slightly burnt on his face, and was wounded on the right side of his head. He was in a lodge.

William Taylor.

Mary, the wife of *John Green*, of Carbrook, near Sheffield, in the said West Riding, colliery labourer, on her oath, says:—The deceased, William Green, was 21 years old, and a colliery underground labourer. He was in the habit of coming to see me and his father every Saturday. He left us on the 5th instant. Last Thursday morning I identified his body at Swaith Main Colliery. He was burnt on the left side of his face, his left arm, and his body. He was in a club.

Mary Green (her × mark).

Peter Jenkins, of Blacker Hill aforesaid, coal miner, on his oath, says:—The deceased, William Jenkins, was 25 years old, and a coal miner. About 10 minutes past five o'clock on the morning of the 6th instant I called at deceased's house, and we went together to Swaith Main Colliery. I went down before him and proceeded to a place called "Double 3," at the bottom of the incline. Between nine and 10 o'clock I was about to begin to post back, and then felt a suck of air, and then a rush of air back again. My lamp was not put out. I and two others immediately went along "Double 3," and up the engine plane to the bottom. After going about 100 yards and reaching the bottom of "Double 3," I met the after-damp coming toward me. It put out my lamp. I was then alone, the other two men, Charles Norcliffe and Paul Kendell, having rushed off before me. I crept from the bottom of "Double" to the engine plane, where the air was going right, and I recovered and walked to the bottom of, with Robert Schofield, who had a lamp. I did not see Norcliffe again until Wednesday last, when he was walking about in the pit yard. I passed over the legs of some persons in the slant level; they were motionless. I was present last Tuesday evening when Paul Kendall's body was brought up the shaft. I saw my son's body last Wednesday evening, between seven and eight o'clock. It was badly burnt. His boots were made according to his own order. He was in the Gardeners' Friendly Society. I did not hear any shot or explosion that morning.

Peter Jenkins (his × mark).

Charles Oates, of New-street, in Barnsley aforesaid,

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aforesaid, colliery hurrier, on his oath, says:—The deceased, William Oates, was my father. He was 45 years old, and a colliery underground labourer. He left home before me on the 6th instant, and I did not see him again until last Thursday morning. He was burnt on his face and arms. His forehead was bruised. He was in the Knights of St. John Club.

Charles Oates (his × mark).

Joseph Brown, of Huddersfield, in the said West Riding, lurry driver, on his oath, says:—The deceased, George Edward Carr, was my half-brother. He was 24 years old, and a coal miner. I saw his body about half-past nine o'clock last Thursday morning, at Swaith Main Colliery. He was burnt about the body and face.

Jnseph Brown (his × mark).

William Timperley, of Romley, near Stockport, in the county of Chester, farm labourer, on his oath, says:—The deceased, James Timperley, was my brother, 34 years old, and a coal miner. I saw his body at Philipson's house this afternoon. I recognised him immediately. Mrs. Philipson has acknowledged she made a mistake. He was in the Odd Fellows and the Philosophical Burial Society.

William Timperley.

Michael Dolan, of Albert-street, in Barnsley aforesaid, colliery hurrier, on his oath, says:—The deceased, James Dolan, was my elder brother, 29 years old, and a coal miner. I lived with him. He left home on the 6th instant, and I recognised his body at Swaith Main Colliery last Wednesday night. He was red in the face, but not disfigured. He was in the Foresters' Club.

Michael Dolan.

Ellen, the wife of *George Sedgwick*, of King Well aforesaid, coal miner, on her oath, says:—The deceased, John Thomas Smith, was my husband's cousin, and lived in our yard. He was 17 years old, and a colliery hurrier, and a son of William Smith, coal miner. I saw him on the 4th instant alive, and his body last Thursday afternoon, at Swaith Main Colliery. I recognised him by an injury to his great toe and his trousers. He was badly burnt on his face and body. He was a member of the Miners' Association, and insured in the Royal Liver Friendly Assurance Society.

Ellen Sedgwick (her × mark).

Louisa Kilburn, of Worsbrough Dale aforesaid, widow, on her oath, says:—The deceased, Thomas Kilburn, was my husband. He was 29 years old, and a coal miner. He left me last on the 6th instant, about half-past 10 o'clock in the morning, when he set off to Swaith Main Colliery to help. I saw his body about half-past eight o'clock last Thursday morning. His face was dark coloured, but his skin was uninjured. He was in a Dead Brief.

Louisa Kilburn (her × mark).

Betsy Harrison, of Wapping-row, in Worsbrough aforesaid, widow, on her oath, says:—The deceased, Albert Edward Harrison, was 13 years old, and a horse driver in a colliery, and my son by the late John Harrison, a colliery labourer, deceased. He went from home on the morning of the 6th instant, and I saw his body about half-past nine o'clock Thursday morning. He was not burnt. He had a slight bruise on his forehead, and another on his right eye. He was in a School Brief.

Betsy Harrison (her × mark).

Emma, the wife of *Jonas Slater*, of Worsbrough Dale aforesaid, stone quarrier, on her oath, says:—The deceased, George Henry Slater, was 20 years old, and a joiner's apprentice, and my son. He left home about 20 minutes to six o'clock on the morning of the 6th instant. I saw his body last Thursday forenoon at Swaith Main Colliery. I knew him directly, although he had a bruise on his forehead. His skin was not broken.

Emma Slater (her × mark).

Mary, the wife of *Henry James*, of Worsbrough Common aforesaid, colliery underground labourer, on her oath, says:—The deceased, Henry Bell, was 16 years old, and a horse driver in a colliery, and my son by my late husband, James Bell, a sailor, deceased. Deceased lived with me. He went out of our house on the 6th instant, about a quarter-past five o'clock in the morning. Last Thursday morning I saw his body at Swaith Main Colliery. He was burnt on one side of the face and chest. I recognised his shoes. He did not put on his pit shoes on the 6th instant. His life is insured in a society.

Mary James (her × mark).

Mary, the widow of *Henry Malin*, of No. 8, Hayes Croft, in Barnsley, aforesaid, on her oath, says:—The deceased, Henry Malins, was 22 years old, and a coal miner, and my husband. I saw him last Monday morning about a quarter to five o'clock, last Friday afternoon at home. His face was scorched.

Mary Malin.

Ellen Carr, of Taylor-row, in Barnsley, aforesaid, widow, on her oath, says:—The deceased, William Carr, was my husband. He was 40 years old, and colliery underground labourer. He left me about 10 minutes past five o'clock on the morning of the 6th instant, and his body was brought home last Thursday night. His face was scorched, and there was a cut over his left eye. He was in the Ark Lodge of Romans.

Ellen Carr (her × mark).

James Lambert, of Worsbrough Dale, aforesaid, pit sinker, on his oath, says:—The deceased, Charles Morton, was my nephew, 20 years old, and a colliery hurrier, and a son of George Morton, a coke burner. I lodge with his father and mother. I saw deceased on the night of the 5th instant at home, and his body on the morning of Friday last when he was brought up Swaith Main Pit. He was slightly burned on his face and body, but badly burnt on his arms. He was slightly bruised on the left side of his body. His life was insured in the Miners' Association and in the Prudential Assurance Society.

James Lambert.

Charles Banks, of Worsbrough Common aforesaid,

said, colliery underground labourer, on his oath, says:—The deceased, George Banks, was my brother, 38 years old, and a coal miner. I saw his body at Swaith Main Colliery last Friday morning. He was burnt about his face, neck, and body. He was in the Free Gardeners' Club, and the Miners' Association.

Charles Banks.

Martha Bever, of White Cross Wood, in Worsbrough aforesaid, widow, on her oath, says:—The deceased, Thomas Bever, was my husband, 47 years old, and a deputy in Swaith Main Colliery. I did not hear him leave home on the 6th instant. Last Friday morning I saw him at the colliery lying dead. I could only recognise him by his clothes, as his face was dark coloured and swollen. He was in the Deputies Association, and a sick club.

Martha Bever.

John Mowbray, of Worsbrough Common aforesaid, brewers' drayman, on his oath, says:—The deceased, Joseph Mowbray (*alias* Joseph Mowbray Robinson), was 19 years old, and a colliery hurrier, and my son. I called him up about half-past four o'clock on the morning of the 6th instant. I saw his body about half-past nine o'clock last Friday morning at Swaith Main Colliery. He was slightly burnt on his face, and badly burnt on his hands and arms. He had a cut on his left eye. He was insured in the Miners' Union, and the Royal Liver Insurance Society. 14 Dec. 1875.

John Mowbray.

Jeremiah Stott, of Beechfield, in Barnsley aforesaid, coal miner, on his oath, says:—The deceased, Henry Stott, was 17 years old, and a colliery hurrier, and my son. I called him up about half-past four o'clock last Monday morning. I saw his dead body last Friday morning at the colliery. He was burnt on his forehead, arms, and hands. He was in the Royal Liver Insurance Society, and the Miners' Association.

Jeremiah Stott (his × mark).

Walter Alsop, of Platts Common, in Hoyland Nether aforesaid, coal miner, on his oath, says:—The deceased, Charles Hall, was 24 years old, and a colliery hurrier. The deceased, Charles Taylor, was my half brother, 26 years old, and a coal miner. I saw their bodies last Saturday at Swaith Main Colliery. Taylor was in the Miners' Association, and the Odd Fellows, and Philanthropic Societies. Hall was in the Miners' Association and Shepherds' Society.

Walter Alsop.

[Adjourned until Thursday next, the 16th instant, at Ten o'clock in the morning, at the Court House aforesaid.

PART II.

16*th December* 1875.

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INFORMATIONS of WITNESSES severally taken on oath on behalf of our Sovereign Lady the Queen, touching the death of the 11 persons hereinafter mentioned, that is to say:—James Burns, Pharaoh Bostock, Joseph Winder, William Lancashire, Henry Jaques, William Walker, Samuel Schofield, Thomas Coxon, John Brown, John Jenkinson, and James Anthony Hancock, at the Court House, in the Township of Barnsley, in the Parish of Silkston, in the Liberty and Franchise of the Honour of Pontefract, in the West Riding of the County of York, on the 16th day of December, in the 39th year of the reign of our Sovereign Lady Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, before me, Thomas Taylor, esquire, one of the Coroners of our said Lady the Queen for the said County, and also for the said Honour, upon an inquisition then and there taken on view of the body of each of the said 11 persons then and there lying dead within the jurisdiction of the said Coroner; And also at the said last-mentioned place and time, by adjournment from the 14th day of December instant, touching the death of each of the 15 persons lying dead at the Township of Worsbrough, in the Parish of Darfield, in the Honour and County aforesaid; And also touching the death of Andrea Konuck, lying dead at the Township of Barnsley aforesaid; And also touching the death of each of the 109 persons lying dead at the Township of Worsbrough aforesaid, within the jurisdiction of the said Coroner, as follows, to wit:—

Mr. *Maule*, Q.C., appeared on behalf of Her Majesty's Secretary of State for the Home Department; Mr. *Mellor*, Q.C., appeared on behalf of Mr. John Mitchell, the Manager of Swaith Main Colliery; Mr. *Shaw* appeared on behalf of the Proprietors of the Colliery; Mr. *Hopwood*, Q.C., appeared on behalf of the Miners' Association; and Mr. *Parker Rhodes* appeared on behalf of the Colliery Deputies' Society.

Ann Harrison, of Worsbrough Common, widow, on her oath, says:—The deceased, Joseph Harrison, was my husband. He was 20 years old, and a coal miner. He left home on the morning of 6th instant, and I saw his body at Swaith Main Colliery last Friday. He was badly crushed about the lower part of his body. His hands were burnt.

Ann Harrison (her × mark).

Elizabeth, the wife of *George Taylor*, of Wors-

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brough Common, coal miner, on her oath, says:—The deceased, James Burns, was 43 years old, and a coal miner. I have been keeping his house for the last 12 months. He set off from home about 20 minutes to five o'clock on the 6th instant. I saw his dead body at the colliery last Friday. He was burnt on his body and hands, but not on the face. He was in the Knights of St. John Club.

Elizabeth Taylor.

Mark Bullock, of Worsbrough Dale, coal miner, on his oath, says:—The deceased, Isaac Bullock, was my brother. He was 30 years old, and a coal miner. I saw him on the evening of the 5th instant, and his body on the morning of the 10th instant. He was badly burnt about the hands and face. I have already identified Thomas Bullock.

Mark Bullock (his × mark).

Mary Phillips, of Worsbrough Dale, widow, on her oath, says:—The deceased, John Edward Phillips, was 18 years old, and a colliery hurrier, and the son of Edward Phillips, a cool miner, deceased. I did not see him alive after the night of the 5th instant. His body was at Swaith Main Colliery yesterday morning, and was burnt about the face and hands. He was insured in the Royal Liver Society.

Mary Phillips (her × mark).

John Muldoon, of Heelis-street, in Barnsley, coal miner, on his oath, says:—The deceased, James Muldoon, was my brother. He was 31 years old, and a coal miner. I saw his body, on the 14th instant, at Swaith Main Colliery. He was badly burnt all over. He was in the Foresters' Club.

John Muldoon (his × mark).

Cartwright Maltby, of Eastwood, near Nottingham, railway goods guard, on his oath, says:—The deceased, Thomas Maltby, was my brother. He was 24 years old, and a coal miner. I recognised his body yesterday morning at Swaith Main Colliery. His life is insured.

Cartwright Maltby (his × mark).

John Glover, of Worsborough Dale, coal miner, on his oath, says:—The deceased, Edward Glover, was my brother. He was 19 years old, and a colliery hurrier. I saw him at his father's house about 10 minutes to five o'clock on the morning of the 5th instant. He was then preparing to go to his work. I owned his body last Wednesday week, the 8th instant, at Swaith Main Colliery. He was slightly burnt on his face and hands.

John Glover (his × mark).

Ann, the wife of *John Black*, of Worsbrough Dale, colliery underground labourer, on her oath, says:—The deceased, John Nicholson, was 17 years old, and a colliery hurrier, and my son previous to my marriage. He lived with us. He left home about a quarter to five o'clock on the 6th instant. On Saturday morning, the 11th instant, I saw his body at the colliery. It was much swollen, but apparently uninjured. He was in the Miners' Association and the Prudential Assurance Society.

Ann Black.

Jonathan Bostock, of Logwood, Worsbrough Dale aforesaid, colliery underground labourer, on his oath, says:—About half-past five o'clock on the morning of the 6th instant I went down Swaith Main Colliery. I was on the rise workings, and heard nothing; but on being told that an explosion had taken place, I came out through Edmunds Main Colliery, about 11 o'clock the same morning. The deceased, Pharaoh Bostock, was 14 years old, and a pony driver in the colliery, and my son. We left home together, but he went down the pit before I did. I saw his body in the pit, as he was being brought out of No. 4 by Charles Evans and others, on the 10th instant. He was burnt on the arms, hands, and face. He was in the Prudential Insurance Society and a School Brief.

Jonathan Bostock.

Thomas Pashley, of Worsbrough Dale aforesaid, coal miner, on his oath, says:—The deceased, Joseph Winder, was 20 years old, and a colliery hurrier, and my stepson. He lived with me. I saw him on the 5th instant at home, and his body on the 14th instant at Swaith Main Colliery. His back was burned, and his face was bruised. He was in the Gardeners' Club and the Miners' Union.

Thomas Pashley (his × mark).

Sarah Jaques, of Calker-lane, in Worsborough aforesaid, widow, on her oath, says:—The deceased, Henry Jaques, was my husband. He was 27 years old, and a deputy in the colliery. He left home about five o'clock on the morning of the 6th instant. I identified his body at the colliery this morning. It appears to be badly burnt. He was in the Deputies Association. He did not tell me he was going to fire a shot.

Sarah Jaques (her × mark).

Jane Goodall, of Swaith-row, in Worsborough aforesaid, widow, on her oath, says:—I have already spoken as to the identity of my husband. The deceased, William Lancashire, was my son-in-law. He was 24 years old, and a coal miner. I was at his house on the 5th instant. I saw his body this morning at the colliery. It is badly burnt. I recognised him by his trousers and stockings.

Jane Goodall (her × mark).

Mary Walker, of Stairfoot aforesaid, widow, on her oath, says:—The deceased, William Walker, was my husband. He was 29 years old, and a coal miner. He left me about 20 minutes past five o'clock on the morning of the 6th instant, and I saw his body at the colliery on the 14th instant. He was burnt on his body, and the back of his head was smashed. He was in the Miners' Union and the Free Gardeners' Club.

Mary Walker (her × mark).

Mark Williscroft, of Stairfoot aforesaid, coal miner, on his oath, says:—The deceased, Samuel Schofield, was 35 years old, and a coal miner. I live near him. I saw him at Stairfoot on the 4th instant, and his body at Swaith Main Colliery on the 14th instant. He was badly burnt all over. He was in the Liverpool Victoria Legal Friendly Society.

Mark Williscroft (his × mark).

Mary,

Mary, the wife of *Thomas Wildsmith*, of Worsborough Dale aforesaid, coal miner, on her oath, says:—The deceased, Thomas Coxon, was 18 years old, and a colliery hurrier, and a son of Charles Coxon, a farm labourer. Deceased has been lodging with me for the last eighteen months. I saw his body on the 8th instant at the colliery. It was badly burnt on the body, but not on the face.

Mary Wildsmith (her × mark).

Richard Forster, of Swaith aforesaid, articled pupil to Mr. John Mitchell, mining engineer, on his oath, says:—I have known Swaith Main Colliery about three years and a half. Mr. John Mitchell is the acting and certified manager of that colliery and Edmunds Main Colliery. I have been engaged since Monday last in preparing the plan now produced. It represents the dip workings of Swaith Main Colliery. The diameter of the drawing shaft is 13 feet 6 inches. The shaft is 230 yards deep, and is the down-cast shaft. The up-cast shaft is 12 feet 9 inches in diameter, and 225 yards deep. The shafts are 68 yards apart. The mine is ventilated by a furnace at the bottom of the up-cast shaft. The air divides at the bottom of the drawing shaft. One current goes down the engine plane. This splits at the first north dip level, and goes on the third bord of the second north dip level until it joins a current from the slant level. They go together up the slant drift, along the drift level, and along the rise side of the drift level workings up the main return air course to the up-cast shaft. The first current splits at the slant level end, and joins the first split at the bottom of the third bord. The first current splits at the double-three level, and proceeds up the first rise bord on the double-three level, and then along old No. 5 level, and goes round the straight level into double-three, and across the engine plane below a pair of doors, and then separates at the bottom of No. 4 drift, one part going up No. 4 drift level, and the other part on No. 4 level. The part from No. 4 drift level goes round No. 4 drift level workings, and up the boundary bord, where it is joined again by the No. 4 level air, and they go together up to Briggs' siding, where the air splits again, part going into the workings of that siding and joining the other part at the top of the rise bord, and passing the south level by an over-cast to the up-cast shaft. There is a small portion of air from the engine plane to ventilate a stone drift below Briggs' siding. It goes into the back incline and down to double-three, where it joins the portion which ventilates double-three. The other main current goes from the engine plane up to the rise workings, which are uninjured. The red colour represents the intake air courses, and the blue the return air courses. I have gone with Joseph Bennett, a deputy, and also the deceased, James Allan, to measure the ventilation at the main incline or engine plane, at the back incline or back engine plane, on the first south level, on the first north bord. In the return from the north dip, and in two places in the south dip, I measured the quantity with an anemometer, and Allan put the amount down in a small book, from which the clerk in the office (William Rayner) has entered up the air book now produced.

Richard Forster.

Joseph Bennett, of Calker-lane aforesaid, deputy in Swaith Main Colliery, on his oath, says:—About 25 minutes past five o'clock on the morning of the 6th instant I went down the pit, and on getting to the box hole I found Henry Jaques, a deputy, since deceased, Joseph Sheldon, also since deceased, and William Midgley, were examining the lamps as the men came down. They were the night deputies. Sheldon had the dip workings, Briggs' siding, No. 4, No. 5, and the slant. He told me all was right and in working order. James Allan (since deceased) came to me in the box hole. Thomas Beever (also since deceased), George Beardsall, and William Earnshaw also came to us. Beardsall was deputy in No. 1, the rise side of the pit. Jaques (now deceased) was deputy in No. 2, the slant drift, the slant level and the drift level. Earnshaw (now deceased) was deputy in No. 3, "Double 3" and Bennett (now deceased) was deputy in No. 4. John Waterworth (now also deceased) was a general deputy, and came into the box hole while I was there for some nails. He had to look after the corves principally. I looked after the men. I left Allan, Sheldon and Midgley in the box hole a little after six o'clock, and went down the engine plane with Earnshaw to Briggs' siding end, where we parted. He went on and I turned into the siding. I told him a man was short in "Double 3," and to take John Godfrey to assist in the jennying. I came out of the siding through the two doors, and found Allan in the engine plane. We returned to the siding where Bray was preparing to build an overcast. Allan gave instructions to Bray. About three weeks before the sixth instant there had been a little gas near the place where John Crossland worked. It had been continually reported up to Saturday the 4th instant. It was in Bever's district. The signature "Thomas Bever" in the ventilation, &c., record book now produced are in Bever's handwriting. I have frequently seen him write his name in it in the box hole. He was in the habit of signing about 10 o'clock in the morning. I told Allan I had sent Godfrey to "Double 3," and that another man was wanted for Godfrey's place. He told me James Blackburn was in the boundary bord, and must supply Godfrey's place. I did not notice which way he went, but I went up the incline to the boundary bord, and then to the furnace shaft bottom. I examined the furnace and found it in good order. I spoke to the furnace man, and turned to go to the engine plane, when Allan came up. We measured some centres for the intended overcast at Briggs' siding. He sent me to see George Hampshire (now deceased) who was in "Double 3" and get him to knock out a brick, stopping in a bord between No. 3 and No. 5 in a portion of Double 3. I went to Hampshire and found him filling a corf at the bottom of "Double 3." I thought he would have sufficient work to last until after 11 o'clock, and I left him and went into No. 4 level in No. 3 district, and up to Joshua Eyre's place. He was with Earnshaw, who was preparing to fire a shot. That was about nine o'clock, as Earnshaw, I think, told me. He said he was late and he asked me to inform those who would be at the box hole at 10 o'clock that he would not be long before he got there. I remained until the shot was fired. It was in the "face." Earnshaw and Eyre had Stephenson's lamps. I had a similar lamp. The fuse was

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lighted by a piece of thin wire made red hot by being pushed through the gauze, and under the glass of Earnshaw's lamp in the usual way, by the deputy. I went six or seven yards further in the direction of the boundary bord, where I repaired the road which had been damaged by some corves getting off the rails. In about 10 minutes I returned past Eyre's place. He was then filling coal which had been blown down by the shot. On reaching Double 3, I found J. Godfrey and Philip Stocks. The jenny rope was fast under a sleeper and I helped to get it right, and to start the corves. We were about 20 or 30 yards from the top of the jenny, when a rush of air came up the jenny. Our lights were not put out. We went down the jenny, and got to the engine plane, but we could not proceed for dense after damp. We returned for a few yards on the Double 3 level, and then tried the engine plane again. We could not get up. Godfrey and Stocks then left me and went into the back incline. I remained until my lamp went out, and then I set off up the engine plane and crawled on my hands and knees to the top side of Briggs' siding, where I laid down by the side of Joseph Secker for a short time, and then hearing Samuel Gilbert's voice about 12 or 13 yards off, I asked Secker to follow me, and I went up the incline after Gilbert. On the plane between the slant level, Briggs' siding, I saw a fire, but I went on to the pit bottom. The air gradually became better. I did not pass over anybody. The seam of coal is the Barnsley thick bed, nearly nine feet thick, The length of the engine plane to "Double 3" is 594 yards. When I got to Eyre's place he was putting a cartridge into the drill hole, which he afterwards rammed with a copper head on a wooden shaft. The men make the cartridges at their own homes. The drifters occasionally use loose powder carried in tin canisters. I have known shots fired in No. 3 straight bord on the rise of the slant drift level, but not during the last 12 months, while the men were down. Shots have been fired since, when the men have been out. James Allan stopped the firing of shots in that level in June 1874, when I acted as the deputy there. After a shot then a feeder of gas fired. Within the last six months no shot has been fired there. The men have wedged the coal down throughout that level during the last six months. I have occasionally gone three or four times a week, but have not seen any preparations for firing there.

Joseph Bennett.

Julia Brown, of Waltham-street, in Barnsley aforesaid, widow, on her oath, says:—The deceased, John Brown, was my husband. He was 35 years old, and a coalminer. He left home about half-past four o'clock on the morning of the 6th instant, and I saw his dead body at home to-day. He was burnt a little and very dark coloured. He was in Miners' Association.

Julia Brown (her × mark).

The said *Joseph Bennett* further says, I now produce lamp No. 72, which was belonging to a deputy, and another lamp, No. 45, which was belonging to an ordinary man.

(Mr. *Hopwood*, cross-examined.) I was under Allan, the underviewer, who was immediately under Mr. John Mitchell. The night deputies would also examine the lamps of the men on the night shift, as well as those on the day shift. If a lamp went out the man would take it to a station, one being on the end of the slant level on the engine plane, where there was a man appointed to unlock and relight the lamps. The water-hole bank is about 100 yards from Eyre's place. The storekeeper well knew the number of Eyre's place. I did not know of any shot on the 6th instant, except in Eyre's place.

(Mr. *Mellor*, cross-examined.) Allan had been underviewer three or four years. A lamp on being broken or unlighted would be taken to a station, and if unfit to be used would be retained and another lamp given out. Another station was in the intake at Double 3. I was with Bever at the place where gas had been seen, and on the 4th and 6th instant the place was quite clear of gas. The rush of air was about three quarters of an hour after the shot was fired. A cartridge will contain about half a pound of powder.

Joseph Bennett.

John Godfrey, of Copper-street, in Barnsley aforesaid, colliery, underground labourer, on his oath, says:—I have been working off and on for the last five or six years at Swaith Main Colliery, I went down between five and six o'clock on the morning of the 6th instant. I went to the slant level end of the engine plane. I took my coat off there, and then went down to "Double 3," where I found Philip Stott or Stocks. William Earnshaw came, and I told him we were short of a man for working the jenny, and he told me to go on. I did so. Joseph Bennett came to us between nine and 10 o'clock, and helped us to get the rope right. He was with us about 20 minutes, and I went to the jenny bottom, and soon after I got there I felt a rush of wind come (I can't exactly say where from), and my lamp was put out. I went to the bottom of Double 3 level to go to the pit bottom. Bennett and Philip and two and three more persons overtook me. Some of them had lights. We went to the engine plane side and were then stopped. We then tried the back travelling road and went up it to the slant, where we were turned back by dense smoke to "Double 3," where we remained 10 or 15 minutes. Four or five of us again tried the back travelling road and got to the pit bottom. We walked. Some of the lamps continued to burn. George Milward and a driver named Hammonds came out with me and Stott. I saw a bit of coal or wood burning as I went up the engine plane.

(Mr. *Hopwood.*) I heard no shot fired that morning.

John Godfrey.

William Reyner, of Pontefract-road, in Barnsley aforesaid, clerk at Edmunds Main and Swaith Main Colliery, on his oath, says:—I have been in the service of the proprietors for four years and better. It was Allan's duty to report to me the state of the ventilation of Swaith Main Colliery weekly, generally on Friday afternoons. I produce the ventilation, &c. record, which I have entered from time to time from his reports. The last entry is on Friday evening, the 3rd instant. It contains seven lines, the first four being for the "intakes," and the last three being for the "returns."

William Reyner.

Robert

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Robert Schofield, of Hollin Well, in Worsbrough Dale aforesaid, deputy in Swaith Colliery, on his oath, says:—I have been employed in the colliery from half-past one o'clock until ten o'clock every working day. I was there on the afternoon of Saturday, the 4th instant. I went through the four districts. I had to attend to the doors and men, and when I left on Saturday night at 10 o'clock all was right. Hearing an alarm on the forenoon of the 6th instant, I went to the pit and found Mr. John Mitchell and Joseph Sheldon starting down the drawing shaft. I went down on the next cage. Thomas Prescott, and I believe William Lomas, went at the same time. We had to clear some corves away to free the cage at the bottom. One rope was disabled. I accompanied Sheldon down the engine plane. We met Peter Jenkin, and I brought him out. Sheldon afterwards brought some men, and said he had been to the slant level. We came out with the men, but soon after that I returned down with Mr. Miller, and explored the No. 3 district into No. 5 level. All seemed to be all right there. I had seen on going down the engine plane that the door to Briggs' siding had been blown down toward the engine plane. I next saw two doors blown down at the waterhole, at the bottom of the engine plane. They were blown down the hill. After being in No. 5 level, I went with Mr. Miller and Mr. Pickles to No. 4 level, into the boundary bord, where the roof had fallen, and we could not get any further. We returned to the pit bottom and went out. Last Monday when I was down the pit a man named Bostock handed to me some powder in a tin canister, which would contain about two pounds. I did not take out the cork. I put the canister into the powder magazine.

(Mr. *Mellor.*) I was at the bottom of the drawing pit when Bostock brought the canister to me. He told me he got it out of No. 8 far gate, in the slant drift level. It was six o'clock on Monday morning. I had been as far as I could get down the No. 8 previously. I went to the "face" of the bank there. I think I could not have missed seeing a canister if there. I saw a chock there. The middle of the bank had fallen in. The chock was standing clear. Bostock was alone. He had been working in that bank last Monday with James White, F. Seymour, James Dufton, Henry Kay, Ellis Schofield, William Heatherglen, and John Oldroyd.

Robert Schofield.

[Adjourned until to-morrow morning, the 17th instant, at Ten o'clock, at the Court-house aforesaid. Jurors bound in 20 *l.* each.

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17 Dec.

At the said last-mentioned time and place.

THE said *Robert Schofield* further says:—I took Bostock to the place and pointed out what he was to do. He said he found the canister about two yards off. It was a dull tin canister. I saw no drill or other tool about. Bostock did not give me a drill. The can was well corked.

(Mr. *Maule.*) I saw the body of a dead horse in No. 7 gate last Monday. I was not acting as deputy in the slant level drift until noon on Monday, the 13th instant. Nobody appeared to have been there previously to make any clearance. I have not been there since Monday. I remained there about half an hour.

(Mr. *Hopwood.*) I set Bostock to remove rubbish from the "face." I saw as much rubbish in Briggs' siding as in No. 8 gate.

(Mr. *Shaw.*) Bostock told me he found the can at the bottom of the chock. The chock was two yards and a half or three yards from the "face." The rubbish was up to the chock.

(Mr. *P. Rhodes.*) I saw the chock distinctly. The rubbish was to be cleared away in order to try to find bodies. There is plenty of room in a chock to put a can in.

Robert Schofield.

The said *Jonathan Bostock* further says:—I began to work at the colliery after the explosion on Wednesday, the 8th instant. The first shift I then worked was with Moses Whitehouse and a man named Smith. We had to put up sheeting on the north and south sides to turn the air into the dip-workings. There was some sheeting up, and we made it more secure. On Thursday and Friday, the 9th and 10th instant, I was watching the return air at the pit bottom. I was not on again until Monday, the 13th instant, when Robert Schofield went with me down No. 9 bord gate up to the bank "face," where the roof had fallen. I could not get over. I had White and six others left with me. We worked there for six hours. I found the bottom part of a "snap-can" about seven feet in the "goaf." It had Akers' name on it. I felt at the bottom of a chock about six feet from the "face," and found a powder can. White, who had his hand in on the other side of the check, said, "There's a fuse here, Bostock." I pulled the fuse out and put it on the bottle. I also found some motties in the chock. They appeared to be marked "23." I therefore put "23" in chalk on the bottle, and laid it on the pack side until I was ready to leave. I handed the bottle to Robert Schofield at the pit bottom as I was going out. The place was not cleared. No body was found there. I have not been to that place since. Last Tuesday I was fettling up the roads in No. 4 level in No. 3 district. I was at the pit bottom on Wednesday last. Yesterday I was again in No. 4 level, and was faying fallen roof at the bottom of the bank gate. Simon Bellerby was deputy with Joseph Jackson yesterday. Under the muck, at the top side of a small throw, we found the body of a man named Jenkins. He was about four yards from the "fault," and about two yards from the side. There were five men beside myself, and the two deputies. A

 lamp,

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lamp, crushed nearly in two, was close to the body.

(Mr. *Maule.*) I cannot recollect the exact time I began to work on the 13th instant. I think it was six o'clock in the afternoon. There were three chocks standing. There were two or three picks lying at the bottom of the bank gate. I did not see any trace of a shot having been fired. There appeared to be about a pound, or a pound and a half, of powder in the can.

(Mr. *Mellor.*) The can was upright inside the chock. The picks were about six feet from the chock. The powder appeared to be pebble. I saw six yards down yesterday. It had fallen straight. From the floor to the top of the muck was about nine feet. The left foot of the man was near the edge of the fall. He did not appear to be burnt. There were several props down close to his body and under the fall. It is usual for colliers to leave tools at the bottom of the bank gate, and take what they want with them.

(Mr. *Rhodes.*) The fuse was rolled up in a smaller compass than usual. The can and fuse were in such a place as they would be left when a shot was not intended to be fired.

Jonathan Bostock.

James White, of Stairfoot aforesaid, coal-miner, on his oath, says:—I went down Swaith Main Colliery about six o'clock on the morning of the 6th instant. I was on the old jenny up to the top side. About half-past nine o'clock my hurrier told me the pit had fired, and I went to the old jenny, where I found afterdamp coming along the level towards my working place. I tried to go down the jenny, but had to go back, and then I went towards Edmunds Main Colliery, and, in a slit, I heard groans, and on going in I found Thomas Pearce, the hanger-on. He would be about 400 yards from the pit bottom. His hands were burnt, and he complained of pain in his legs. I took him with me. On reaching the slide door, which separates the two collieries, I could not open it. I looked for another road, and Beardsall, a deputy, came up and opened the slide door. We then went on, and up Edmunds' main shaft. On Tuesday, the 7th instant, I went down the engine plane to Briggs' siding with Mr. Miller and two other gentlemen. I then helped to remove three bodies from the engine plane to the pit bottom. I saw the bodies of two horses in the slant level, and also the bodies of five men there. At the bottom of the drift there were the bodies of a man and boy. I helped to bring the bodies out. I left Mr. Wilson down the pit when I came out. On Wednesday, the 8th instant, I was with John Sugden in Briggs' siding. I was not down the pit on the 9th instant. On Friday, the 10th instant, I was down about four hours in search of bodies and clearing out the pit bottom, and in removing refuse. I was not in the pit on the 11th instant. On Monday, the 13th instant, I was on the slant level and up the slant drift. At the end of the slant drift level, where there is a fault, there was bord gate on the rise side. We bratticed the slits as we went on up to No. 3 slit, where our shift was up. That was at noon. I went down again 12 hours afterwards. That is at midnight, when Robert Schofield and Jonathan Bostock were in charge of our party. We went along the slant level up the drift, and along the drift level. I and three others then explored up to the fault at the end of the drift level, and returned to No. 9 bank gate. Six others then stopped with Bostock and me at No. 9 gate. After examining the "gob," I found the bottom part of a snap tin. The top part was found about six feet away, and about 10 feet from the "face." On reaching the first chock, about six feet from the "face," Bostock put in his hand and pulled out a bottle. I then put my hand in and felt a fuse, which Bostock also pulled out. I saw him shake the can, which appeared to be half full. I have not been in since.

(Mr. *Maule.*) I saw a fall of roof in the drift, and one in No. 9, and one in Briggs' siding. The main levels are about four yards wide.

James White (his × mark).

Martha Jenkinson, of Stairfoot aforesaid, widow, on her oath, says:—The deceased, John Jenkinson, was my husband. He was 26 years old, and a colliery underground labourer. I did not hear him get up on Monday, the 6th instant. I have this morning seen his dead body at Swaith Main Colliery. His head is crushed and burnt. His arms also are burnt. I recognised his boots, stockings, and trowsers. He was in a sick club.

Martha Jenkinson.

George Coclough, of Worsborough Common aforesaid, coal miner, on his oath, says: I was working at Swaith Main Colliery on Saturday the 4th instant, and came out about two o'clock in the afternoon. I worked in the slant drift level. Henry Jaques was the deputy there. I worked at No. 8 far gate bord with Henry Akers. We (that is, Akers and myself) had holed the "softs" out for seven yards for about three yards under, and had "spragged" the undermined coal. The coal was very hard and bad to get. Akers and I were consulting what we should do when James Allan (now deceased) came to us. We asked him for an allowance, as we could not make wage there. He said he could not give any allowance. He examined the coal and said, "You must have a shot," and he also told me and Akers to get some drilling tools out of the store. When I went out at two o'clock I saw the storekeeper and got a drill and a scraper, and I left them at the blacksmith's shop. I did not see Allan again. He also told us to bring some powder on Monday morning, and have the hole ready by two o'clock in the afternoon, when Jaques would fire it. I did not go to work on the 6th instant, as I did not consider it necessary for two men to drill a hole. On Tuesday the 7th instant I went down with Mr. Peacock to the stone drift and also to "Double 3." I saw Paul Kendell on the side of the engine plane. He was lying on his back, and dead. Two other bodies were near his in the engine plane. A jacket and waistcoat were hanging on the brick-work in the stone drift. I also saw a tin can and a fuse there, that is, in the drift from the engine plane.

(Mr. *Maule.*) On Saturday the 4th instant Akers told me he thought he would buy two pounds of powder at Barnsley. I did not tell Akers I was not going to work on the 6th instant. I told Charles Waller, the hurrier, to stay at home that day. I have seen Jaques try the

the gas in the "goaf." The gas could only just be perceived in the lamp about four yards from the "face."

(Mr. *Hopwood.*) The shot was to be fired within four or five yards from where the gas was to be fired.

(Mr. *Maule,* re-examined.) Powder and fuse are kept at the colliery, and when supplied an entry is made in a book. Powder is often charged one penny a pound more at the pit than at the shops. It would take about two hours to drill a hole. The men have to pay for their own powder but not to fire it.

George Coclough (his × mark).

Joseph Simmons, of Worsbrough aforesaid, lampman at Swaith Main Colliery, on his oath, says:—I now produce a can and fuse which on Tuesday morning the 14th instant I found in the magazine. Robert Schofield told me he had put it there. That was about six o'clock in the morning. The can will hold three pounds. It now contains two pounds of pebble powder. The powder supplied by the owners is blasting powder. Fuse is not always supplied with powder. The colliers find their own powder-cans. Four pounds of powder is the largest quantity given out at one time. The usual quantity is about two pounds.

(Mr. *Hopwood.*) The can was marked "23" when handed to me. A few days previously a can which belonged to Edward Rose was brought to the magazine. It was a three-pound can, and contained about two pounds of blasting powder. John Greenwood was the storekeeper on the night shift. Cartridges are not supplied by the owners.

Joseph Simmons.

Hannah Akers of Buckley-street, in Barnsley aforesaid, widow, on her oath, says:—The deceased Henry Bilton Akers was my husband. He was 26 years old and a colliery underground labourer. He has been working at Swaith Main Colliery for the last four years. On Saturday the 4th instant, a few minutes to nine o'clock, he brought home a can of powder and a ring of fuse. He said he had bought two pounds of powder and the fuse at Mr. Wright's in Sheffield-road, as James Allan had told him to get a shot into the coal. The powder was in a paper, and deceased put it into a pint can which had a loose handle. The can now produced is a quart can. Deceased placed the can when filled and the fuse on the set pot. The powder was very large in size. On Monday the 6th instant deceased set off to his work about ten minutes past five o'clock, leaving me in bed. When I got up I found the can and fuse had been removed, and I have never seen either the can or fuse since. Deceased had a quart can also. I have that at home.

(Mr. *Maule.*) Deceased had two papers of powder, and made some cartridge cases.

Hannah Akers (her × mark).

Charles Radley, of Worsbrough Common aforesaid, coal miner, on his oath, says:—I began to work in No. 4 drift level, No. 3 district, in Swaith Main Colliery. I went down at 12 o'clock on the morning of Monday the 6th instant, and came out about half-past five o'clock. I did not find anything wrong. When I left the "face" was straight. Joseph Sheldon went about 20 yards before me, when I was going in to work. I met him and another night deputy, named Midgley, at the pit bottom, when I went out. I have not been down since. 17 Dec. 1875.

Charles Radley (his × mark).

George Beardsall, of Swaith aforesaid, deputy in Swaith Main Colliery, on his oath, says:—I have been seven years at the colliery, and for the last four years deputy in No. 1 district. On Monday the 6th instant I went down at half-past five o'clock in the morning. I did not feel any suck or blast, nor hear any sound of explosion. About 10 o'clock Alfred Walton, a horse driver, told me the pit had something amiss. I was then in South Swaith level. I accompanied him into the boundary bord. William Heatherglen was with us. After going down the bord for about 200 yards we were stopped by chokedamp, which was coming from the dip workings. We turned back and into the Swaith north level. I then sent Walton to fetch the men out of Swaith south level, and John Black to fetch those out of the north level. I waited until all came to me. I sent them up to Edmunds' Main Colliery, and then returned into the boundary jenny, and found the chokedamp had got 100 yards higher. I tried to get through the north level, but could not. I turned back and opened the separation door, to allow the air to come from Edmunds' Main Colliery. In 10 or 15 minutes I opened the slide door, and found White and Pearce there. I sent them out, and went to a slit between the intake and return air in north B. level. I lifted up a sheet there, and was driven back by chokedamp. I went and got some water, and then returned and propped up the sheet, in order to allow the damp to come into the return air-course by a short cut. In 10 or 15 minutes afterwards John Lindley, John Sanderson, Noah Dakin, Henry Crossland, James Wilcock, and two hurriers came to me, and I sent them out by Edmunds' Main Colliery. I then closed the slide door and the sheet, as I knew all the men were out. I then went with the air from Edmund's Main Colliery down the boundary bord to a pair of double doors at C. level. One door was damaged. I partly opened the other door, and thereby allowed the lower part of the boundary bord to get cleared. Thomas Bennett, from Edmunds' Main Colliery, then came to me with Richard Foster, Benjamin Clegg, Charles Slack, and others. We went down the bord, and found John Waterworth's body about 200 yards from the double doors. He was lying on his face. His lamp was near him. He appeared to have been suffocated. Henry Cawthorne's body was lying a few yards below Waterworth's, and it was not burnt.

George Beardsall.

Adjourned until To-morrow, the 18th instant, at Ten o'clock in the morning, at the Court-house aforesaid. Jurors bound in 20 *l.* each.

18 Dec. 1875.

18*th December* 1875.

At the said last-mentioned time and place.

THE said *George Beardsall* further says:—After finding Cawthorne's body, we went down the bord about 30 yards further, and there found the body of a horse, which was lying across the road and was cut. The horse was loose but dead. A broken corve was lying near him. There were fragments of corves above and below the horse. The horse was one which travelled between the pit bottom and the end of the boundary bord. Near the horse, two stoppings were blown out. They were about 30 yards from the bottom of the bord, and in a slit above the bank level. They were blown toward the upcast shaft. They did not interfere with the air. We proceeded down the bord, and found the body of Thomas Bullock above 10 yards below the horse. He was not burnt. Lower down was George Sykes' body. It was slightly burnt. I there felt affected with the damp, and I went out through Edmund's Main Colliery. I went down again at noon on Tuesday the 7th instant, and accompanied William Ward round No. 1 district. On reaching C. level, I found the double doors shut, and on getting through the doors, the bodies of two brothers named Allen, who appeared to be slightly burnt and covered with dust. The return air was right. I went down again at six o'clock in the evening of the same day with William Ward and others, and brought out the six bodies. On the 8th instant, at noon, I again went with William Washington, and proceeded to Briggs' siding, where we found a horse lying dead at the bottom of the jenny. It was slightly burnt. Fragments of corves were about it. At the top of the jenny, the bodies of three men were lying dead. They were carried out. They were burnt. They had on their trousers and clogs. On going up the slit, we found the body of a man who was blackened and charred. On turning up the bank to the left, we found the bodies of Bailey, Parslett, and a hurrier close to the "face." They appeared to be much burnt. A chock near Bailey was apparently blown down. Benjamin Bennett's body was found higher up close to the "face," and was burnt. We then returned down the jenny to the straight level, and down the dip bord, where the roof, about 50 yards down, had fallen to a great extent to the dead horse. John Semley was under it. I then came out. Waterworth was a deputy. Cawthorne was about 500 yards nearer the pit bottom than his usual working place. He was called also Daly. Bullock was Cawthorne's assistant, and worked at the same place. Sykes was near his working place. The two Allens were 120 yards from their working place. Bailey, Parslett, and their hurrier were in their working place. Bennett was in his working place. On the 9th instant, I went down the pit at six o'clock in the morning. I helped to take six or seven dead horses out of the stables. Part of the brick partitions between the standings was down. They were in the top side stables and apparently blown principally toward the boundary bord. I subsequently went down the engine plane on the slant level, and to No. 5 bord in No. 2 district. Thomas Woodhead's body was in No. 5. It was burnt slightly. I saw no body on the slant level or No. 5 bord, except Woodhead's. There was a fall of roof just above the place where his body was found. I helped to bring it out about six o'clock in the evening. On Friday the 10th instant, at six o'clock in the morning, I went down to the slant drift. Daniel Green, William Aston, William Midgley, and four others were with me. We found two bodies (James Green and Isaac Bullock) waiting to be removed. Charles Bever and his party had brought them there. James and Isaac were burnt. I assisted to take them out, and afterwards to remove the bodies of two horses out of the slant drift level. I went down again at nine o'clock at night into No. 4 drift in No. 3 district. Charles Taylor was found at the bottom of the back boundary bord and Pharaoh Bostock's body was found near the body of Hall in the back boundary bord. All three were burnt. I helped to get them to the pit bank. I then went to Briggs' siding and found the body of John Black, *alias* Nicholson, near Crossland's bank. The body was not much burnt. I then helped to remove it and to clear the pit bottom, and to prepare the furnace for lighting. A fall of water in the down-cast shaft assisted to ventilate the pit. I saw the furnace lighted and came out at nine o'clock on Saturday the 11th instant. I went down on Monday the 13th instant, at six o'clock in the morning, and went to the slant drift level, and to the far rise bord. William Midgley, Ellis Needham, and four others were with me. We put up bratticing to a fall of roof at the top of the bord. We all came out together at noon. I went down on the morning of the 14th, at six o'clock, and to the slant level, and then to Briggs' siding. I next went down at midnight, and to the rise bords on the slant drift level. In the back bord we found the bodies of John Phillips and William Malsby, which appeared to be badly burnt, and to be in their working places. I went with them to the pit bank.

(Mr. *Mellor.*) I have been a deputy for four years. I have been acquainted with James Allan for seven years. I had some conversation in June 1874 with him, Jaques, and other deputies, and it was arranged that there should not be any firing of a shot in No. 2 district until after two in the afternoon. No alteration was ever made to my knowledge in that arrangement. The deputies had always met to discuss matters relative to alterations. Mr. John Mitchell was present at the meeting in June 1874. Parslett's number was "twenty-three." I saw a fall in Akers' place in No. 8 fargate; one in No. 5 hole dip bords on the slant level; one in the slant drift, and another in Briggs' siding. Akers' fall was the largest.

George Beardsall.

William Robert Brown, of No. 15, Sheffield-road, in Barnsley aforesaid, ironmonger's assistant, on his oath, says:—I am in the employ of Mrs. Wright & Son. I am in the habit of selling gunpowder to colliers every day. It is always made up in one pound packets. The grains of powder

powder vary in size. The ordinary quantities generally sold are two pounds or four pounds. I also sell fuses in rings. 18 Dec. 1875.

William Robert Brown.

George Read, of Worsbrough Dale aforesaid, storekeeper of Swaith Main Colliery, on his oath, says:—I am on duty in the daytime. I have to supply tools to colliers when they begin to work at the colliery, and when they require fresh ones. All the tools are numbered. I keep an account of all delivered out by me. I produce my book. The tools and mottees are marked with a number, and the men are debited with the articles supplied to them. On the 4th instant George Cauckley, *alias* Coclough, is numbered 73, and took out a drill and scraper; No. 23 is Joseph Dodgson; No. 55 is Henry Askers. None of the tools have been brought back since the explosion.

George Read.

Hannah Hancock, of Stairfoot aforesaid, widow, on her oath, says:—The deceased, James Anthony Hancock, was my husband. He was 34 years old, and a colliery underground labourer. He got up about half-past five o'clock on the morning of the 6th instant, and set off to work. I saw his body at Swaith Main Colliery this morning. He was in the Foresters' Club.

Hannah Hancock (her × mark).

Thomas Reed, of Edmund's Main Colliery aforesaid, timekeeper, on his oath, says:—On Friday, the 10th instant, I saw the body of the male (being No. 89, brought out of Swaith Colliery). He was apparently about 14 years old. His hair was singed and his face was burnt. He was buried at St. Thomas's Church, Worsbrough, on the 11th instant. He has since been identified by his clothes. He was John Waller.

Thomas Reed.

Samuel Newhill, of Worsbrough aforesaid, colliery blacksmith at Swaith Main Colliery, on his oath, says:—I mark tools when brought to me by the storkeeper, and repair and sharpen tools when requisite. On the 4th instant, George Coclough brought to me a drill seven feet long, and a scraper, to be sharpened and sent down the pit. My striker, Richard Tooley, took them with other tools to go down on the same afternoon. The number on them was "40." James Allan told me I need not alter the mark as the tools were only wanted for one shot, and he would bring them out on Monday. James Allan came to my shop after Coclough had left me. It was a churn drill which Coclough brought.

Samuel Newhill.

William Carr, of No. 161, Sheffield-road, in Barnsley aforesaid, lamp cleaner at Swaith Main Colliery, on his oath, says:—I am 16 years old. I am employed in the lamp room at the pit top. I have given out powder to the men for about a year. Some was given out every working morning, or in the afternoon when the shift began. Joseph Simmons brought me the powder in bottles having the men's numbers on. When the men tell their numbers I hand them the bottles. I do not make any entry about them.

William Carr.

Joseph Simmons, further says:—I produce the powder and fuse book kept by me. Two pounds of powder was the quantity usually served out to one man. On the 4th instant I served out 22 pounds of powder and three fuses, and on the 6th instant 15 pounds, but nine pounds was back during the week. I put down the quantity given out on a slate, and made the entries into the book every week. I have therefore only entered six pounds of powder on the 6th instant. Nine men got powder on the 4th instant.

(Examined by Mr. *Hopwood.*) I entered the particulars from my slate on Thursday, the 9th instant. I enter the amount required for the following day, when the men ask for it on coming out on the previous day. I produce my lamp book. Akers' lamp was No. 16, and his hurrier's No. 17. Coclough's lamps were 174, 175, and 208.

Joseph Simmons.

Matthew Thickett, of Jump, in Wombwell aforesaid, colliery labourer, on his oath, says:—The deceased, Levi Thickett, was 18 years old, and a colliery hurrier, and my son. He resided with me, but I did not see him after Sunday the 5th instant. I saw his dead body at Swaith Main Colliery on Wednesday, the 8th instant. He was slightly burnt on his face, hands, and arms.

Adjourned until Monday next, the 20th instant, at 10 o'clock in the morning, at the Court House aforesaid. Jurors bound in 20 *l.* each.

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At the time and place lastly before mentioned.

William Midgley, of Ardsley aforesaid, Deputy in Swaith Main Colliery, on his oath, says:—I was regularly on night duty up to six o'clock in the morning of the 6th instant. Before I came out I saw the day deputies, Allan, Earnshaw, Bever, Beardsall, and Jaques, but not Waterworth. I was in No. 1 district, and the top of Briggs' siding. I told Bever that the two brothers Allan could not work till two plates were cut. They worked in the bord near the double doors, near which the two bodies were removed by me and others on the 7th instant. I reached the pit again about half-past 12 o'clock in the afternoon of the 6th instant; I made my report in the night report book in the box-hole. My entry notes that there was a little gas in No. 4 working-place in North B., No. 1 district, and in No. 5, in North E., which, I suppose, is near "Double 3," in No. 3 district, and in No. 2, in North E., and in South D., in No. 4 district. The entry as to No. 4, North B., relates only to my district. The remainder of the entry was written by me at the request

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request of Joseph Sheldon, who signed the book in my presence. The gas was in abandoned places in Sheldon's district. I helped to bring John Crossland from the pit bottom. He was not burnt, but he seemed to be raving. I left him at the top. He worked at the low side of Briggs' siding. On going down again I brought up William Brown, who was burnt on his hands and face. I subsequently fetched up two bodies from the pit bottom. Ten or 11 feet of the bottom of the conductors were knocked off, and we had to carry the bodies up a "stee." I afterwards went down the back travelling road to where some new stables were being built. All appeared to be right there. I and others then went to the slant level, passing 9 or 10 dead bodies. On getting to the top of the drift we found a black horse alive. It was loose. I took it to the pit bottom, and then went home. Three others with me were William Hammond, James Johnson, and Thomas Prescott. The air was thick. On Tuesday, the 7th instant, between 9 and 10 o'clock, I went down with Thomas Kay and three or four others. We put some sheets up to act temporarily instead of the overcast, which was down. I went down again about two o'clock the same day with George Chapman, who took down an ambulance basket. We and Thomas Kay, George Hall, and Charles Bever, then went to the far bords in the slant level in No. 2 district, and we there put William Nettleship into the basket, and brought him out. Nettleship said on my reaching him, "Well, Billy, lad, I'm dry." Some tea and brandy were given to him. He did not raise his arms. He could not stand. He cried out about his back while we were carrying him out. He had on a shirt and trousers. I afterwards went down with William Ward and four or five other men to No. 1 district, from which I assisted to remove bodies. On Wednesday, the 8th instant, I went down with Mr. Miller and 9 or 10 others to the low end of No. 4 level in No. 3 district, where we found several bodies, and among them that of William Earnshaw in the drift. He was lying on his face. He was burned a little. I helped to carry the body out. There was a fall of roof in the level near where that body was. I again went down with Bever in the evening. We had four strangers with us. We put some bratticing up in the slant drift level in the slit between the two levels, and found the bodies of two men who were burnt, and were on rolleys. We brought them out. We also found Joseph Sheldon's body on the north return air course. Two lamps were lying near him. Another body was about a yard from Sheldon's. We brought both out. I was not down on Thursday the 9th instant. On the following day, Friday, I again went up the slant drift to the slant drift level, and got out the bodies of three horses, which were covered with dust; one was about 50 yards off the drift, another about 50 yards further, and the third about seven or eight yards further still. The party consisted of 12 or 13 men, including George Beardsall, John Morris, and Tyas. There were some corves at the "pass-by." The middle horse was lying across the level. At midnight on the same day, I again went down with George Beardsall and a party of men, altogether a score, and up No. 4 drift in No. 3 district, where we removed three bodies from the boundary bord. The first body was near the end of the level; another was about 60 yards off, and the third was nearly in the "face." A horse's body was lying near the end of the level. In Briggs' siding we removed the body of a horse, and then one of a trammer, called Black. We finished the overcast there, and got out between 9 and 10 o'clock on the morning of the 11th instant. At midnight on the next day, I and my brother James, and the furnaceman went down to the furnace, which was all right. It had no damage done to it by the explosion; I staid down until six o'clock on Monday the 13th instant. I went down again about six o'clock in the evening with Robert Schofield, James Johnson, Thomas Kay and others, about a dozen altogether. Beardsall and Bostock came to us. We went up the slant drift to the slant drift level, and brought four bodies from No. 6 bank on the fall side. They were burnt; three of them were near together. We came out at midnight, and returned six hours afterwards to the far bords on the rise side, where we put up bratticing. At 10 o'clock on Tuesday morning, I began to accompany the inspectors round No. 3 and 4 districts on the south side of the pit. Last Wednesday morning I went down at six o'clock with Prescott, William Hammond, and James Midgley, and five or six other men, and to the far end of the slant drift level, and in No. 8 bank we began to remove muck until 10 o'clock in the morning, when I again accompanied the inspectors. We found Henry Jaques's body in No. 4 near gate, in the slant drift level. Two other bodies of men were near it. We got over a fall of roof in the gate. The fall extended five or six yards in length, and seven or eight feet into the roof. Jaques was much burnt. The other bodies were also burnt. I did not go down again until midnight yesterday, and I went at midnight with Morris, Johnson, James Midgley, and about nine other men to the drift in No. 2 district, where we remained until six o'clock this morning clearing out the drift.

(Examined by Mr. *Hopwood*.) Men begin to go down about six o'clock on Saturday mornings, and come out about two o'clock in the afternoons. There is no further shift on Saturdays. On other days men go down also about half-past one o'clock in the afternoon, and also about 10 o'clock at night. There are also three shifts of deputies. I am not aware that the men were drawn away for shots.

(Examined by Mr. *Mellor*.) The fall would be about 60 yards from Nettleship. It was of stone and coal. Principally stone. I did not see Nettleship's lamp. The fall in No. 8 far gate was stone from the roof. There was not any appearance of fire on the chocks. We fire shots in No. 1 district at night occasionally. It takes me four hours to go round my district. I believe mine is the smallest district.

(Re-examined by Mr. *Hopwood*.) I could not get over the fall in No. 8 far gate. Four shots were fired in my district after the 22nd October last.

William Midgley.

Charles Bever, of Higham Colliery, in Dodworth, in the parish of Silkston aforesaid, colliery manager, on his oath, says:—I was never down Swaith Main Colliery before the 6th instant, when about four o'clock I went down with William Midgley, Bennett, Philip Casey, George Chapman, and another man. We went direct

direct to the slant level, and up to the slant drift level, and about half-way on it. I was in advance. The air did not feel bad until we reached the bottom of the drift. There were broken corves at the pit bottom. Only one rope was working in the drawing shaft. The engine plane appeared to be all right. All along the slant level were dead men, dead horses, and broken corves. We went through into the return air course, and found Joseph Sheldon's body and that of another man, about five feet from him. The lamp of that man was standing upright in his hand and was burning. Sheldon's lamp was in his hand and on its side, and the light was out. A large quantity of afterdamp was coming out of a slit leading from the rise side of the workings in the slant drift level. On the 7th instant, between three and four o'clock in the afternoon, I went down with Kay and Chapman, and went to the dip side of the slant level where we found Nettleship about five or six yards below his working place. He was lying on his back and was badly burnt, but quite sensible. I sent Chapman for an ambulance and assistance. Nettleship had some tea given to him. He wanted his own bottle, which, he said, was full of tea. Kay was left with him, and I went into the level in order to guide the men who might happen to come. Nettleship was burnt. He was taken up about six o'clock. He said, "You've been a long time in finding me; do you know how it has been caused?" And also that he was a long time before he knew where he was. He did not say anything about having seen any blaze or having heard any explosion, but he told me, "You'll see there'll be no more shooting here." I asked him whether he had had a shot, and he replied, "No, but I know there has been some shooting going on." After a consultation at the pit top, I went down with Kay and William Midgley to the rise side workings on the slant level, where some bodies where found. After that I went up the drift and into the slant drift level, a little further than on the previous day. Up to the 7th instant I saw no indications of fire, but several of violence. I saw that some of the bodies were burnt. I went down on Wednesday the 8th instant between 10 and 11 o'clock at night, with Moses Makin, William Daniel, John Pell, Benjamin Ainsworth, and William Midgley and others (13 or 14 altogether), and brought out the bodies of Sheldon and the man near him. After that, stoppings were replaced in the slant drift level. Seven stoppings were put in and then our shift was over. On the night of Thursday, the 9th instant, about midnight, I went down with Mr. Joseph Mitchell to fetch out a gang under Greenhalgh. We found them bringing out two bodies from No. 6 bank on the dip side of the slant drift level. Makin, Batty, John Senior, Arthur Senior, Shepherd, Meadows, and eight or ten other men then went to No. 8 near gate, where were five bodies which I caused to be removed. Two were buried in a fall of coal. I did not notice a lamp particularly. I saw soot and dust on the timber there. The coal was only removed sufficiently to clear the bodies. I afterwards went to the "face" of the low level in the slant drift level. The force of an explosion appeared to have gone with the air there. I also went down No. 9 gate and climbed 10 or 12 yards over a fall of coal and roof, and then returned, and went down No. 8 far gate, and got to the other edge of the fall, which appeared to be 25 and 26 yards long. We could not get on the fall in No. 8 far gate. I saw no sign of fire there. The force of the explosion had, apparently, expended itself there. I then went along the bank level to No. 3 bords on the right side of the slant drift levels, but could not get to the "face" for afterdamp. It was then about a quarter to six o'clock on Friday morning, the 10th instant. On Tuesday, the 14th instant, about 11 o'clock in the morning, I accompanied Messrs. Evans and Wardell, the inspectors, and 13 others, down the pit. We proceeded down the engine plane to "double 3" where stoppings were down, doors blown out, and corves broken over No. 3 district. The doors at the bottom of the engine plane were blown inro the plane On No. 4 bank in No. 4 level (drift), we found a shot was ready for firing. There was a large fall of roof (stone and coal) at the bottom of No. 4 bank. About 120 yards lower down there was a hole drilled, but not charged. Up the boundary bord the broken corves seemed to have been driven in the direction of the return air. From the boundary bord, I went to Briggs' siding by way of the engine plane. Gas was then coming very slightly out of a bank on the dip side of Briggs' siding. At the end of Briggs' level I stopped at the boundary bord while some of the party went down; after that I went along Briggs' siding to the rise bord, and then up the jenny to the boundary bord, and so on to the furnace. On the 15th instant I went down, between 10 and 11 o'clock, with the inspectors and others (11 altogether) and along the slant level and slant drift to the slant drift level; I then saw indications of pebbles and bits of coal having been forced into the cross bars of the roof from the direction of the slant drift level. There were two broken corves in the drift, and several at the bottom of the drift, and apparently blown in the direction of the slant level. The wheel at the top of the drift was on the floor. On getting into No. 5 far gate, there were very strong indications of fire, charred props, and the force of the explosion at this place appeared to have gone in each direction. Bars and props were there down, and there was a fall of coal and stone over which I and others passed down to the "face," where the charred props were standing. The south side of the props was most charred. In my opinion there were two explosions; one in the "post" between 5 and 6 bank, and the other in Brigg's siding. After being in No. 5 far gate, I tried to get through No. 3 to No. 4 gate, but could not get as the roof was down. The explosion there seemed to have gone in the direction of the drift. From that place we went down the far side of No. 6, and up the near side of No. 7. The explosion there seemed to have gone to the north. After that we went down the far side of No. 8 bank, where the violence of the explosion had apparently abated considerably. We afterwards went up No. 3 rise bord gate, where the violence of the explosion seemed to have come from the north-east. At the "face" of this No. 3 bord, there was a broken corf. There was also a broken corf in the bank level, at the bottom of this bord. The explosion there seemed to have gone to the north, and also to the south-west. It was after being there that we went to No. 5 bank, and then to No. 1 bank, where there was nothing particular. At the entrance to No. 5 bank, I saw some corves blown

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against the top side of the level. Last Saturday, the 18th instant, about eight o'clock in the morning, I went to No. 8 far bank with Mr. Joseph Mitchell, Bennett, and Littlewood. A large quantity of the fall there had been cleared away. The "face" to the corner had been cleared. I then found the nine motties now produced in a chock. They were in the first chock about five or six feet from the "face," and were attached together by a rope, which is not in any way burnt, charred, or affected with fire. They are numbered "73."

(Examined by Mr. *Maule*.)—I saw a can of powder (about 2 lbs.) in the hands of Mr. Normansell, at No. 4 bank in the slant drift level. Mr. Evans gave me a can of powder at the bottom of the engine plane in No. 3 district. There was, apparently, about 1 lb. of powder in it. I saw no fuse. The two cans were found on Tuesday, the 14th instant.

(Examined by Mr. *Hopwood*.)—I have not examined Briggs' siding particularly. No. 5 bank in the slant drift level is a likely place to give off gas as it is near a large throw.

(Examined by Mr. *Mellor*.)—I heard William Nettleship talking to himself before we got to him. I should expect firedamp to rise from the "goaf" to the "face." Gas accumulates in holes and pockets in the roof of the goaves. I have known lamps damaged by being pricked by a pick. Gas may fire in a quick current of air, when the lamp may be considered safe. In my opinion the explosion was not from the firing of a shot. An explosion in one part of the pit might drive an accumulation of gas in another part upon a defective lamp, and thus cause another explosion. There was a large explosion of fire damp in Higham Colliery several years ago (1860) at the furnace, into which then the return air passed. In my opinion, blasting with gunpowder ought not to be allowed in Barnsley thick bed of coal. It cannot be dispensed with in the stone drifts.

Charles Beevers.

Sarah Ann Bray, of No. 3, Park-square, in Barnsley aforesaid, widow, on her oath says:—The deceased, William Bray, was my husband. He was 24 years old, and a bricklayer. He began to work at Swaith Main Colliery about the 22nd ultimo. He left home about five o'clock in the morning of Monday, the 6th instant. I saw his dead body at the colliery on the 8th instant. One side of his head and face was blown off, and his right arm was cut very much. I identified him by a ring on his finger, and by his shoes.

Sarah Ann Bray.

Adjourned until To-morrow the 21st instant, at 10 o'clock in the morning at the Court House aforesaid. Jurors bound in 10*l.* each.

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21*st December* 1875.

At the said last-mentioned time and place.

Robert Miller, of Strafford Colliery, in Dodworth aforesaid, mining engineer and colliery manager, on his oath says:—I did not go down Swaith Main Colliery till the 6th instant, about one o'clock, when I accompanied Mr. James Wilson, Joseph Sheldon, a man named Kilburn and others, altogether 18 in number. The bottom of the shaft for about eight feet, was filled up with the wreck of broken conductors and corves. A man named Crossland was at the bottom. He said we were killing him. He was lifted into the cage in a blanket and sent up. We then examined the return air courses, and found the double doors between the two shafts were blown into the return air course. We went about 20 yards along the return air course on the north. There was not any smoke, but there was a smell of afterdamp. We all next went down the engine plane to the end of the slant level, where a man named Brown or Pickering was found. Sheldon and some others carried him out. On going down to the end of the slant level, Sheldon pointed out a slit in which some small coal had been on fire. It was not burning then. It was then arranged that our party should be divided into three; I having charge of one, Wilson of another, and Sheldon of the third. After leaving the man at the pit bottom, Sheldon was to go on the slant level and explore as far as he could get. I did not see him again alive. Robert Schofield was with me. We went into Briggs' siding, and down to "Double 3." In the siding were several dead bodies, and a fall of roof in the level. A human foot with part of a stocking and a shoe on, was found about 20 yards from the bodies. A quantity of lamps was lying about. I did not see any injured. None was burning. On returning to the engine plane, we found it was quite free from afterdamp, and on going further down we came to four bodies, one being Paul Kendell's. Beyond that, I heard a man screaming. On reaching him, he was seated with his back against the side. He seemed to be unconscious. Charles Peake and three others took him out. A dead body was near him. Schofield accompanied Mr. Wilson down to "Double 3," and I went up No. 4 level in No. 3 district, and the No. 4 drift level, to a fall of roof. I climbed on the fall which was extensive, but I could not get over it. On returning, we found Mr. Wilson in No. 4 level. Schofield then agreed to go on Briggs' siding, and down the boundary bord, and I to go on No. 4 level to the boundary bord, where the afterdamp was too much for Mr. Pickles, who had to sit down. I went up the boundary bord to a fall of stone, which I tried to get over. In No. 4 level, we found a naked body very much burnt. Two boys were lying dead a short distance further on. They, as well as the other bodies there, were burnt. As I was coming up the engine plane to go out, I met a man bringing down a fire extinctor. I went again at half-past three o'clock the same afternoon, to the north return air course. I did not perceive any smell of

fire

fire then. I went up to the office and consulted with Mr. Wardell, and Mr. Wilson came to us in a short time. On Tuesday, the 7th instant, at noon, Mr. Mitchell requested me to take charge of the pit in the absence of his son, Mr. John Mitchell, who was unwell. Some men came out saying that the cage had been fast in the shaft, and that the ventilation was changing. I therefore went down, and sent men down to get out bodies, and also to repair the pit bottom. About two o'clock in the afternoon, I again went down. James Beaumont and Edward Scanlon were with me. We went down the engine plane to No. 4 drift level, where I saw a crushed lamp marked with chalk, and hanging against a prop. There was not any dead body within 20 yards of that prop. I did not notice any sign of fire on the prop. I went to No. 4 bank, and found two or three small falls of coal and roof. On reaching the boundary bord, Mr. Beaumont became ill, and we returned to No. 4 level, where there was some fresh air. We then proceeded to Eyre's place, and found that a shot had been fired as the coal partly remained. A body there was badly burnt. It was evident that a quantity of coal had been filled as a corve was full, and was standing on the road all right, and the marks of shovelling were plain. On the following day I was present when a lamp was found under some coal near the "face," and in the position where it would be likely to be placed by the collier, when at work. It was about one o'clock on the afternoon of Wednesday the 8th, when I went down. Mr. J. F. Thompson and Mr. Robert Pearson accompanied me. Before going into Eyre's place that day, I went to the waterhole where two bodies were lying. After leaving Eyre's place, Messrs. Thompson and Pearson brought to me a can of gunpowder, which we laid near the lamp. We then went to No. 2 rise bord, No. 4 level, and found two bodies up the gate, near the fall of roof. We got over the fall, which extended 9 or 10 yards, and examined the "face" on the right hand side, where there was a fall almost joining the other, but not so large. A corve was there driven into the latter fall, and a dead body was driven head foremost into the wreck of the corve. Another body was driven northward out of the goaf with his face on a rail. The face was smashed. The bodies were badly burnt. On the left hand side of the top of the bord in the bank there was another body, but it was not so much knocked as the others. There were props lying about the "face." They were long props such as were used for keeping up the roof of the goaf. There were two men with their clothes on, lying about 20 yards from the props. The clothes were burnt. The two men appeared to be wood-takers. They were the two men whom I first saw on going into No. 2 rise bord. The other three men appeared to have been coal-getters. I ordered some men to take the bodies out, and then I went to the boundary bord, and found a body in a slit. The body was burnt. On returning I took observations of the direction of the blast. In my opinion, there had been an explosion of firedamp in the goaf at the top of No. 2 rise bord. There were indications of the force of the explosion having gone north and south in the level from the bottom of No. 2 rise bord. I have also noticed that the force had radiated north-east and west from the goaf. The area of the goaf is about 12 acres. The firedamp would be likely to be driven out of the goaf by a fall of roof. I have since examined the mine round the goaf (except the boundary bord where the fall of roof is) with Mr. Jeffcock. On Thursday, the 9th instant, about one or two o'clock in the afternoon, I went down the pit with Mr. John Higson and a party of engineers and gentlemen. We went on the slant level and up to the north return air course along the slant drift, and slant drift level, and on to the pit bottom. The roads then had been cleared, but there were indications of an explosion having gone down the slant drift, and into the slant level, and also up the return air road. In my opinion, there were two explosions at the least. I think there may have been an explosion of firedamp in the dip workings on No. 4 drift level, No. 3 district. I went down with the inspectors on Tuesday.

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(Examined by Mr. *Hopwood.*) I do not know how a sudden escape of firedamp could be prevented. The area of the return air course, where it crosses the fault, is 30 or 40 feet, and in my judgment amply sufficient, although before reaching that spot there are two air courses. The greatest force from the 12 acres goaf appeared to be along Briggs' siding to the engine plane. The traces of explosion up the engine plane were on the right hand side going up. There appears to have been no fire about "Double 3."

(Examined by Mr. *Mellor.*) I have turned my attention to explosions. Firedamp requires at least five per cent. of air to make it explode. There is not any stopping between the two engine planes. They are both intakes.

(Examined by Mr. *Maule.*) I did not particularly notice the slant level. I am of opinion that Stephenson's lamps are more safe than Davy's.

(Examined by Mr. *Rhodes.*) All the roads are more than 25 square feet sectional area.

(Special Rule 17.) I do not consider it safe to use gunpowder in the Barnsley and Silkstone seams of coal.

R. Miller.

James Wilson, of Stairfoot aforesaid, resident manager of the Oaks Colliery, on his oath, says:—I was in Swaith Main Colliery about four years ago, but I did not go below the slant level. I was in an arbitration case as to the prices of getting coal. The ventilation was then very good. On the 6th instant, at noon, I reached the colliery, and found all at the top in confusion. I went down about half-past 12 o'clock, after examining the colliery plan in the office, and went to the south return air course and found the first of the double doors entirely blown away, and the second partially blown away; both westward. After that I examined the north return air course, and found the double doors entirely blown away toward the north. On reaching the pit bottom after that I met Mr. Miller. We then found Crossland, who was calling out "murder" and "police," and with difficulty we wrapt him in a blanket and sent him up. I then went with Mr. Miller, Joseph Sheldon, and others, to the end of the slant level, where Sheldon agreed to take a man (Brown) to the pit bottom, and then return and explore the slant level and slant drift level, and adjacent workings. I did not see Sheldon again alive.

21 Dec. 1875.

Mr. Pickles went on with us, and two men went with Sheldon, who seemed to be very much excited, and said it was very hard that his only son was in it. After he had left, a note came down the pit saying that young Sheldon was at home and uninjured. We went down to the junction at double three, where Mr. Miller went up the drift level, and I went to the end of the engine plane. At the bottom of the plane I found a pair of doors blown up towards the pit. A door in a slit in the back travelling road was standing and undisturbed. I did not see anybody after one near where Brown was, until I rejoined Mr. Miller. On reaching No. 4 level we again divided, and I went to Briggs' siding where I saw the bodies of James Allan and another man, with his head partly blown off. They were blown about six feet up the bord apparently with terrific force. There was an overcast blown down or preparing to be built near. A little further on an overcast was blown down and right away toward the pit bottom. The bodies of two men were lying further on, and the roof had fallen on some empty corves. On getting over the fall the body of a boy was lying behind the corves in the pass-by. At the top of the first dip bord there were two bodies, which, as well as those of other persons and horses there, were burnt. Near the bottom of the same bord the side near the lowest part was burning, and some clothing or brattice cloth on the floor was on fire. We put out the fire. On reaching the end of the bord we found the roof of the goaf had fallen up, and was then weighting. I sent for a fire extinguisher. In the level at Briggs' siding we afterwards found two other bodies, and the far bank on the low side was weighting, and the coal was coming down. On reaching the boundary bord we turned to the left with the intention of meeting Mr. Miller. Two bodies were lying at the end of the slit to the bank. I saw nothing in the slit but pieces of brattice cloth blown to the boundary bord. We arrived at a fall in the bord, and as it was weighting we turned back, and on reaching the end of the slit again, I then saw some cloth burning in the bord on a small burner of firedamp from a crack in the floor, which had heaved up. I saw no other part of the floor in the pit heaved up. I did not notice it on coming down. I began to be affected with afterdamp on reaching the bank level in Briggs' siding. Two of my deputies then joined me and we went to the jenny on Briggs' siding where we met some men bringing the fire engine, which we took to the places where we had seen the two fires. On reaching the pit bottom I met Peter Hall and others who had just come down. On Tuesday, the 7th instant, I went down with Mr. Jeffcock and a score of others about six o'clock in the evening, and after examining the air roads we went to the slant level where Mr. Jeffcock was. I proceeded up the drift and to the slant drift level, where there had evidently been an explosion between 5 and 6 dip banks. I got back to the pit top at five o'clock on the morning of Wednesday, the 8th instant. I did not go down again that day. About two o'clock in the afternoon of Thursday, the 9th instant, I went down with Mr. Miller and others. I also went down with the inspectors on Tuesday, the 14th instant.

(Examined by Mr. *Maule.*)—I believe there have been two explosions. One of the edges of the 12 acres goaf, and the other in the dip workings in the slant drift level. I could not trace any connection between them. In my opinion, the explosion of gas in the 12 acres goaf would be likely to force away to the slant drift level, or cause a suck from the slant drift level and produce the explosion there. I have known the Barnsley thick bed, and I have not allowed any shot to be used in it for the last nine years.

(Examined by Mr. *Hopwood.*)—The overcast intended to have been built would have improved the ventilation of the edges of the 12 acres goaf.

(Examined by Mr. *Mellor.*)—I consider the Stephenson's lamp, both for men and deputies, is the safest lamp used.

(Examined by Mr. *Rhodes.*)—I went through the return air road where it crosses the fault. Some fall was down, but the area was more than 25 feet. I consider the roads and air as good as any in the district.

James Wilson.

[Adjourned until Thursday, the 13th January 1876, at the Court House aforesaid, at 10 o'clock in the morning. Jurors bound in 50*l.* each.

PART III.

13*th January* 1876.

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INFORMATIONS of WITNESSES severally taken on oath and acknowledged on behalf of our Sovereign Lady the Queen, touching the death of the seven persons hereinafter mentioned, that is to say:—Samuel Haigh, John Heppleston, Edwin Jenkins, Jonathan Tranter, William Smith, Robert McKnight, and Henry Bilton Akers, at the Court House, in the township of Barnsley, in the parish of Silkston, in the Liberty and Franchise of the Honour of Pontefract, in the West Riding of the County of York, on the 13th day of January, in the 39th year of the reign of our Sovereign Lady Victoria, by the Grace of God of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, before me, Thomas Taylor, esquire, one of the Coroners of our said Lady the Queen for the said County, and also for the said Honour, upon an Inquisition then and there taken on view of the body of each of the said seven persons then and there lying dead within the jurisdiction of the said Coroner; and also at the said last-mentioned place and time, by adjournment from the 21st day of December last, touching the death of each of the 15 persons lying dead at the township of Worsbrough, in the Parish of Darfield, in the Honour and County aforesaid; and also touching the death of Andrea Konuck, lying dead at the Township of Barnsley aforesaid; and also touching the death of each of the 109 persons lying dead at the Township of Worsbrough aforesaid; and also touching the death of each of the 11 persons lying dead at the Township of Barnsley aforesaid, within the jurisdiction of the said Coroner, as follows, to wit:—

Elizabeth Ellis, of the Dale, in the township of Worsbrough aforesaid, widow, on her oath, says:—The deceased, Joseph Watson, was 18 years old, and my son by my late husband, Richard Watson, a coal miner, deceased; deceased was a colliery hurrier, and resided with me. He left home with his brother Tom, as before mentioned.

William Haigh, of Hoyland Nether, in the said county, engineman at a forge, on his oath, says:—The deceased, Samuel Haigh, was 35 years old, and a colliery underground labourer. He was a widower and lived with me. I did not see him on the morning of the 6th ultimo. I have recognised him by his boots and belt. He was in the Odd Fellows' Club.

William Haigh.

Hannah Heppleston, of Worsbrough Common, in the township of Worsbrough aforesaid, widow, on her oath, says:—The deceased, John Heppleston, was 36 years old, and a coal miner, and my husband. He left me about a quarter-past five o'clock on the morning of the 6th ultimo. I identified his body at Swaith Main Colliery by some patches on his boots. He had his trousers and stockings on as well as his boots.

The said *Peter Jenkins* further says:—The deceased, Edwin Jenkins, was 21 years old, and a coal miner, and my son. He lived with me. I left him at home getting his breakfast on the 6th ultimo, when I set off to Swaith Main Colliery with the deceased William Jenkins. I have owned him by a binder which he wore round his left foot, and by a silk handkerchief which he had tied round his waist.

Ann, the wife of Henry Tranter, of Blackerhill, in Worsbrough aforesaid, pit sinker, on her oath, says:—The deceased, Jonathan Tranter, was 33 years old, and a colliery hurrier, and my brother. I saw him at Hoyland market on a Saturday, the 4th ultimo. I saw his body at Swaith Main Colliery. I knitted the stockings which he had on.

Mary Smith, of Calker Lane, in the township of Worsbrough aforesaid, widow, on her oath, says:—The deceased, William Smith, was 33 years old, and a coal miner, and my husband. He left me about five o'clock in the morning of the 6th ultimo. I saw his body at Swaith Main Colliery, and identified it by his watch and clothes.

Thomas Watson, of California Gardens, in the township of Barnsley aforesaid, colliery underground labourer, on his oath, says:—The deceased, Robert McKnight, was 40 years old, and a colliery underground labourer. He lodged with me. I saw him on the evening of the 5th ultimo, and his body at Swaith Main Colliery. I have recognised his body by his clothes and by my watch.

Thomas Watson.

The said *Hannah Akers* further says:—I recognsied my husband by a patch on his trousers, and also by his features. He was not burnt or disfigured. The can now produced was his. I bought it myself, I think, at Mr. Lowrance's.

Charles Waller, of Worsbrough Common aforesaid, colliery hurrier, on his oath, says:—I was employed by the deceased, Henry Bilton, Akers, and by George Coclough. I was working with them in Swaith Main Colliery up to two o'clock on the 4th ultimo. Coclough told me on that day that there would not be any more work for me on the 6th ultimo. The coal was very difficult to get down on account of its hardness. When I left the place the "softs" were holed three yards under, and eight yards wide. The air was good, and I saw no sign of gas. I heard Allan the deputy tell Akers and Coclough at noon, on the 4th ultimo, to take a drill down, and a shot should be fired after the men were out on the 6th ultimo.

Charles Waller.

Matthew Marlow, of Britannia-street, in Barnsley aforesaid, coal miner, on his oath, says:—I was working on the top side of Swaith Main Colliery on the 6th ultimo, and I heard a report

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as of a heavy shot, and I came out through Edmunds' Main Colliery. I have been working since in Akers' place for about a fortnight, with eight other men. We found the roof and a little coal down. We built packs to support the roof. On Monday, the 3rd instant, we found the drill now produced. It was reared against a pack side, and was blade upward. It was about three yards from the "face," and was bent by the fall of stone. On the night of the 5th instant I found Akers' body at the bottom of the near gate, and three or four yards from the "face." It was lying on one side, and nearly straight out, and from five to six yards from where the drill was found. There was timber under the body, and a corve was turned over on its side. One of Akers' legs was in the corve. The handle of a scraper was not a yard from the body, and the bit was further from it. I have not been in the place since the 6th instant. The space between the body and the "face" was filled with roof and coal generally in small pieces, which had fallen up to 16 or 18 feet. There was not much of the fall on Akers. (Examined by Mr. *Maule.*) I did not see any sign of a shot having been fired in the place. (Examined by Mr. *Hopwood*). Robert Carr was in charge of our party.

Matthew Marlow.

Tom Kaye, of Waltham-street, in the township of Barnsley aforesaid, coal miner, on his oath, says:—I was not working in Swaith Main Colliery on the morning of the 6th ultimo, but I went down just after Crossland was brought out. On the afternoon of the following day I was with Bever and Chapman when William Nettleship was found. I helped to bring him out. I worked in Akers' place from the 22nd ultimo until his body was found. (Examined by Mr. *Maule.*) The stuff we cleared away was mostly big stones and some coal. (Examined by Mr. *Hopwood.*) Akers was lying on the top side of the turn.

Tom Kaye.

John Frith, of Park Gate, near Rotherham, in the said county, coal miner, on his oath, says:—On the 14th ultimo I went with the two inspectors of mines and 13 others down Swaith Main Colliery. I was then President of the Miners' Association, but am now the Secretary. On that day I found the tin can now produced. It was in a short place in No. 4 level, where a pick marked No. 27 was lying. The can had, apparently, about half a pound of powder in it. I left it at Briggs' siding with two other cans. I saw the can here on the 21st ultimo. A shot had been fired in the place where the can was found. Mr. Casey took up the pick. It was in Eyre's place. The can was in a back corner with some paper such as is used for cartridges. The can had a piece of paper for a cork. The can was crushed. (Examined by Mr. *Hopwood.*) I think the handle has not been broken recently.

John Frith.

George Collumbine, of Worsbrough aforesaid, coal miner, on his oath, says:—On the 6th ultimo I volunteered to go down the Swaith Main Colliery, and I went down several times and found the tin canister now produced. It contained cartridges, and was on the top side of Briggs' siding.

George Collumbine.

The said *Joseph Simmons* further says:—The 20 cans now produced were shown to me some time ago. I received one of them before the 6th ultimo. Two of them are ordinary drifter's cans. Fifteen of them have been handed to me since the explosion. They have powder in them. Six of them are about half full. Eight of them are 2 lb. cans. Two are 3 lb. cans, and three are 4 lb. cans. Lamp No. 105 was Henry Jaques' lamp. No. 16 was Henry Akers' lamp. No. 72 was William Earnshaw's lamp. There were 26 Clanny lamps used by the horse drivers. (Examined by Mr. *Mellor.*) I have examined 24 lamps in the adjoining room. All are damaged. Two of them are Clanny lamps. The other 22 are Stephenson lamps, and belonged to John Brown, John Barrow, William Lancashire, William Jenkins, Arthur Netherwood, William Nettleship, William Maltby, John Heppleston, James Timperley, Henry Bell, Ara Jera, William Davis, Samuel Schofield, Alfred Gilbert, George Kendall, James Anthony Handcock, John Waller, John Goodall, William Tyas, Benjamin Bennett, John Semley, and Charles Beresford. The Clanny lamps belonged to Mark Fletcher and Henry Cawthorne. There are 122 other lamps, which are uninjured. Nettleship's lamp has two bulges on it, and the glass is broken. The number is 65.

Joseph Simmons.

The said *Matthew Marlow* further says:—The churn drill now produced was the one I found near Akers. The scraper now produced was that I also found.

Matthew Marlow.

Joseph Fletcher, of Platts Common, in Hoyland Nether aforesaid, coal miner, on his oath, says:—I worked at Swaith Main Colliery up to the 6th ultimo. I went down about twenty minutes past five o'clock, and went to a following up bank on the first dip bord on the slant level (old No. 5 bord). My brother Samuel was with me. We found that the roof (which was composed of "top softs") had fallen; both coal and stone above it. George Fawcett, Thomas Woodhead, and another by-workman, and Alfred Crackles were there, and getting something to eat. As I and my brother could not get through the slit to our bank we came out. (Examined by Mr. *Maule.*) I was down about six o'clock in the morning of the 1st ultimo, and about noon on that day, while we were repairing the pack wall, and while our lamps were hung on the pack wall, I saw the flames go longer and begin to flicker. We removed the lamps, but said nothing until next day, when Henry Jaques came to us, and then we told him that we had seem some gas on the 1st ultimo. He told us to be careful. He went up to the bank. We were then repairing the pack wall in the bank gate. On the 2nd ultimo I saw no sign of gas. While I and my brother were at work on the 3rd ultimo, the fall of roof in the slit took place, and we came out. (Examined by Mr. *Mellor.*) Our lamps were hung about four feet from the ground, and about three-quarters of a yard from the roof.

Joseph Fletcher.

Philip Casey, of Shirland, in Derbyshire, Managing Director of Stirland Colliery, on his oath, says:—I went down Swaith Main Colliery about half-past five o'clock in the afternoon of the

the 6th ultimo, with Charles Beever, Bennett, and three others, to the slant drift level. I noticed that the force of an explosion had come against the air. I have since been down twice, viz., the 14th ultimo and the 11th inst. On the 11th inst. I went into the slant drift level with Mr. John Mitchell, and examined the fault at the far end. Two other men were with us. We examined Akers' place particularly. A large quantity of stone had been removed, but the "softs" and "hards" with the stone attached had fallen together. We got to the "face," and remained there three-quarters of an hour, but did not find any trace of a shot having been fired there, nor of any hole having been drilled. There was a corf blown over away from the slant drift. (Examined by Mr. *Maule.*) I have been a coalminer for fourteen years. In my opinion an explosion took place in the first dip bord at the top of the slant drift. (Examined by Mr. *Hopwood.*) In Briggs' siding, on the 14th ultimo, there was not a piece of wood of any size. (Examined by Mr. *Mellor.*) The air was deficient on the 6th ultimo. On the 14th ultimo there was no sign of gas. On the 11th instant there was a little gas in Briggs' siding. In my opinion there was only one explosion.

Philip Casey.

George Sykes, of Barnsley, aforesaid, Superintendent of West Riding Police, on his oath, says:—On the 6th ultimo I reached Swaith Main Colliery about half-past three o'clock in the afternoon. The first body brought up was that of William Henry Bailey, and when brought out I had him searched. In the pocket of his waistcoat was a lucifer match. The next body was that of James Blackburn. In his waistcoat pocket were three fusees. Both of the deceased were without coats

George Sykes.

James Ruby, of Barnsley, aforesaid, West Riding police constable, on his oath, says: I went on duty at Swaith Main Colliery on the 6th ultimo, and then saw Thomas Lockwood's body brought up. On examining him I found a tobacco pipe in his waistcoat pocket. A little twist was there also. I searched other bodies, but found nothing on them.

James Ruby.

Thomas Spencer, of Barnsley, aforesaid, Sergeant of West Riding police, on his oath, says:—I went to Swaith Main Colliery on the 6th ultimo, and saw the body of George Henry Slater examined. In his waistcoat pocket were a perfect match and part of another.

Thomas Spencer.

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John Mitchell, of Swaith, in the township of Worsbrough, aforesaid, Certificated Manager of Edmunds and Swaith Main Colliery, on his oath, says:—I have been in the entire management for three years. I had been at the collieries for the four previous years. The mode of managing the collieries is the usual one for the Barnsley Seam. About 380 men and boys were generally employed underground in Swaith Main Colliery. On the morning of the 6th ultimo, 244 men and boys went down, and five came up before the explosion. James Allan was the under-viewer, and had been so three or four years, and probably for four years previously a deputy. He was always very attentive. I generally went down the pit three or four days, and frequently every day in a week. Gunpowder for blasting was used with my sanction, except on the slant drift level and slant level. On the 6th ultimo, a little before ten o'clock, I had left the office to go to the drawing shaft, a distance of 150 yards, and heard a noise as of a collision between railway waggons. I only heard one sound. William Bellamy, the engine-wright, met me, and I accompanied him to the Pit-hill. Smoke was clearing away when we got there. Out the upcast shaft smoke more than usual continued to emerge. On trying to move the ropes in the drawing shaft, the cage at the bottom was found to be fast. One rope was then unfastened, and was clamped to the top, and then I and William Bellamy and Joseph Sheldon went down on the other rope. I saw no damage until we reached the bottom, where the conducting rods were broken off on a level with the top of the porch. About 23 or 24 men were there. Seven or eight of them were injured. There were also three dead bodies. The injured men were sent up, and then George Linford was removed from under the other cage and sent up. He was a hanger-on and is at work again. I went to the overcast near the stables, and found it was down. I saw Robert Schofield at the pit bottom when I returned there. I sent him and Sheldon down the engine plane, and I came out for more help. I went down again between nine and ten o'clock at night. (Examined by Mr. *Maule.*) The workings were divided into four deputies' districts in the day time, and into two districts at night time. A deputy could examine his district in an hour and a half or two hours, so far as the working places are concerned. The remainder of the time is occupied in examining the goaves and unused places. Two deputies would go down at midnight on Sunday. Midgley and Sheldon went down first thing on the 6th ultimo. My attention had not been drawn during the week ending the 4th ultimo to any outburst of gas in the slant drift level. The prohibition of the use of gunpowder was during the hours of six in the morning and two in the afternoon.

Adjourned until To-morrow morning at 10 o'clock, at the Court House aforesaid. Jurors bound in £. 20 each.

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At the said last-mentioned time and place,

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Thomas Bennett, of Snape-hill, in Darfield aforesaid, Underviewer at Mitchell's Main Colliery, on his oath, says:—I was employed at Swaith Main Colliery up to two years ago. On the 6th ult., between one and two o'clock in the afternoon, I went down with Dyson and James Johnson, and we went to the return air-course on the north side, and there found Sheldon and Kilburn side by side and quite dead. Sheldon had a lighted lamp in his hand. He and Kilburn were lying with their heads up the hill. The afterdamp was very bad. I came out about 10 o'clock that night. I brought out two canisters of powder on the 15th ult.; I was sent to fetch them from Briggs' siding.

Thomas Bennett.

The said *John Mitchell* further says:—North E. includes the slant drift and slant drift level. I was down the shaft on the 3rd ult. There is not any rule authorising the searching of the men for powder or matches. The first split of air (slant drift and slant drift level) was 27,280 feet; the second is 10,580 on the rise side; and the third is 3,600 on Districts 3 and 4; of the last, 6,000 feet go on Briggs' siding. There is also a supply of fresh air, about 7,000 to 7,500 feet per minute, to the furnace. (Examined by Mr. *Hopwood.*) I am 30 years old, and son of one of the proprietors. A few men go down about half-past one o'clock in the afternoon for the afternoon shift. Where gas is found, the men in the district of the deputy are withdrawn. (Examined by Mr. *Mellor.*) My certificate is dated 26th May 1873, and signed by Mr. Bruce, Secretary of State. Allan was a competent viewer; he had the general supervision underground. He and the deputies had the confidence both of the masters and of the men. (Examined by Mr. *Rhodes.*) The night deputy examines the lamp of each man as soon as he gets down the pit. A copy of the rules is posted in the pit and on the pit-hill. A barometer and thermometer are on the pit-hill, and also near the ventilating furnace. The deceased, John Waller, was 14 years old, and a horse driver, and assisted John Gibson.

John Mitchell.

Joseph Frederick Thomson, of Wath-on-Dearn in the said county, Colliery Manager at Manver's Main, Adwick-on-Dearn, on his oath, says:—I was not down Swaith Main Colliery until Tuesday morning the 7th ult., when I accompanied four men down early. I went up the slant level and up the slant drift to the seventh far gate, where we were stopped by the afterdamp. The corves were broken, and appeared to be blown against the air. The signs of an explosion were most severe in the slant drift. I remained down until noon. I went down again at noon on the 8th, and went to No. 4 level in No. 3 District; I saw E. Glover's body, which was burnt about the head and pushed against a pack. A lamp, No. 41, was under water, and his molties were numbered No. 90. We went to the boundary-bord. The explosion appeared to have come down the level toward the engine plane, from the second place, and gone toward the boundary-bord from the same place. Mr. Miller was with me. After leaving him I went down, at Mr. Wardell's request, to Double 3. (Examined by Mr. *Maule.*) I did not go into the places in the slant drift level. I have had 21 years of experience with pits; I sanctioned blasting with gunpowder until 6th ultimo. The men use Clanny lamps and the deputies Davy lamps; no Stephenson lamps are used at Manver's Main Colliery. (Examined by Mr. *Hopwood.*) If I knew of gas at the top of the 12 acres goaf, I should allow shot to be fired at the bottom, if no gas could be found there. I am of opinion that there were two explosions. (Examined by Mr. *Mellor.*) I was surprised to find the ventilation so good in No. 3 District.

J. F. Thomson.

John Gerrard, of Wakefield, in the said county, Inspector of Mines, on his oath, says:—I am at present acting as assistant to Mr. Wardell, and have been so for the last two years. I went down Swaith Main Colliery about March 1874, and then made a lengthened examination. I again visited the colliery on the 7th, 8th, and 9th ultimo. I went down with a large party, of which Mr. John Higson and Mr. Robert Miller were members, for the purpose of examining the north slant drift level workings, and, if possible, to get through the return air-course to the shaft, this not having as yet been done. After examining the returns near to the shaft bottom, we proceeded down the engine plane, and below the entrance to the north slant level we placed sheets partly across the engine plane to check the quantity of wind going through the No. 4 levels below, and to increase the quantity going to the slant level and slant drift workings. We also went into Briggs' siding level to the dip-bord, and then back and along the slant level up the drift, and along the drift level to the "face," and back along the bank level up the No. 1 return-bord, through the fault, and along the north level to the furnace, and then we came out. On the 10th ultimo I went down with Mr. John Mitchell. After examining the returns and the south level to the boundary-bord, we went down the engine plane to Double 3 north levels. After examining the entrances to these, we proceeded to the bottom of the plane into a working place there, and through the water-hole places into the No. 4 drift south levels. We proceeded along the level until we arrived at the place where Earnshaw's body was found, beyond which there was a fall. We went down the bord by Taylor's place, and found Taylor's body, and then went along and up the boundary-bord, and there found the bodies of Pharoah Bostock and a person numbered 43. We went up the boundary-bord, examining all the open places we could get into, until stopped by the fall, and then back into several places, Eyre's, &c., in No. 4 level,

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level, and so out by the engine plane. On the 13th ultimo we went down the engine plane, along the slant level, up the drift, and through as many of the dip side places as we could get into. In one, between the 5th and 6th banks, we found four bodies. We then went along the higher, or bank level, and through as many of the rise places as we could get into to the return bord, and so out. In No. 3 rise-bord we found two bodies. On the 14th ultimo I went down with Mr. Wardell, Mr. Evans, and a large party, and we went through No. 4 drift level and No. 4 level workings, also in the stone drift and through Briggs' Siding Level, and through the workings there, up the jenny, and by the boundary-bord over the air-crossing to the Bank Level, and out. On the 15th ultimo I went down with Mr. Wardell and Mr. Evans and party, and along the engine plane, slant level drift, and slant drift level, and through some of the dip side places. We found Jaques in No. 4 near gate, and two other men, and proceeded up the rise bords and out by the drift, calling at the dip-bord, where Nettleship was found. On the 6th instant I went down with Mr. John Mitchell, and along the slant level, up the drift, through all the dip side places, and through the rise places, and out by the return drift, examining the long dip bords, Jaques'-place, Timperley's place, and others where fire had been found, Akers'-place, and the two woodmen's place. On the 7th instant I again went down, and then examined the furnace and measured the ventilation. From the many inspections made and the evidence heard by me at this inquiry, I find the damage and loss of life to be confined to the lower, or dip side of the shafts. That there are three localities where evidence of violent explosion and heat are to be found, viz., the north slant drift level, No. 4 levels south, and Briggs' south level. I find the whole of the men, with one or two exceptions, in the north slant drift level workings were killed in their working places, and all burned. That the men in No. 4 south levels were killed at their places, and burned, and that the men in Briggs' siding levels were killed and burned. Commencing at the downcast shaft bottom and proceeding along the north level, the first evidence we have is the doors in the first rise bord. The first door was found lying uphill on the rise side of where it originally stood; the second door was partly blown uphill. Going back and down into the level between the second and third bords there stood a pair of doors to separate the north return from the downcast shaft. These doors have been carried northward along the level. Beyond these doors there appears to be no evidence of any explosion. Proceeding from the downcast shaft along the south level, we found the stable walls indicating a force having come from south to north, or from the boundary bord to the shaft. A little further the air-crossing over this level was found to have been blown down. Close by this there were stoppings in the higher side-slits or openings, which had been clearly carried uphill. Beyond this air-crossing, in a rise opening communicating with the return, was a pair of doors which were found carried uphill. A stopping which was in the boundary bord on the lower side of the level had been forced uphill a considerable distance. Coming back to the engine plane, on the bank head at the time of the explosion were several corves which had been blown into the shaft bottom, and found there by the persons who first descended the shaft. Down the engine plane to the entrance to the slant level, and along the slant level, we have not much evidence of damage until we come to the dip bord. There we have evidence of a great force having come from the north, broken tubs, &c. At the bottom of the drift there are cross timbers or bars, which on the north side are covered with indentations from pieces of shale, and also a number of small pieces of shale driven into them; in the drift there were some corves (a run was going on at the time of the explosion, two full corves being lowered down and two empty ones pulled up). These corves are very much broken up. At the top of the drift, which is 90 yards long and rises about 1 in 5, there are other cross-timbers similarly bespattered with pieces of shale, some pieces penetrating nearly a quarter of an inch. The wheel which was at the jenny-top was blown down, and carried a little down hill. In the "passby" a train of tubs was standing, the "outby" end of which was driven somewhat downhill into the near gate road of the second bank. At the "inby," or north end of the train, the end of two tubs was very much smashed, as though a force coming "outby" had done it. Passing down the long dip bords, which go a distance of yards from the level, at the entrance two or three stoppings were found broken down, the fragments lying on the north side; a door in the low level had also been carried some distance to the north. Beyond about 40 yards and to the "face," there was very little indication of damage. I believe two men who were at work at the "face" of one of the bords got out of the bord alive, and were found in the slant level suffocated. Proceeding along the drift level to No. 3 bank far gate, down here two men were found dead, one, the trammer, about 30 yards from the toy, and the other, the collier, in the "bank face." At the north side of this bank was a large fall, which could not be got over, and caused us to go back into the level; down the near gate of the No. 4 bank, at the face of a posting coming uphill, were found the bodies of three men, two colliers and Henry Jaques the deputy; one of these colliers, William Lancashire, was found lying on his face close to the edge of the goaf; by his side was a glass bottle broken into pieces, and he had evidently been eating when the explosion took place. Close by him, and lying on his back, was the body of Jaques; he was close to the edge of the goaf. A little further along the "face" was the body of Brown, lying on his face. There were evidences of great heat here, the goaf side of the standing props and timbers were charred, and some of them covered with coked dust. Down the far gate of No. 5 bank, at the posting "face," we found three bodies: Timperly, a collier, Muldoon, his trammer, and Fred Galloway, a horse driver. They had evidently been killed on the spot. In this place I saw the greatest evidence of heat, the timbers, some of them very much charred; one prop in particular appeared to have been on fire. Passing along into the next place we found a lamp hanging up uninjured, and just round the corner in the gate road, the body of Joseph Winder, a trammer; his collier was not down that day, and he was consequently at work alone. This fall we could not get over, and having to come back, I noticed that the lower side of the timbers in both these gate roads had coked dust on,

on, whilst the upper sides had none on, showing that a wind had blown across to the north, and out by the near gate of No. 6 bank. In the level between the 5th and 6th banks were some tubs which had been very much smashed; also the stoppings in the openings between the straight level and the bank level had been carried uphill. At the top of No. 6 near gate several tubs had been dashed against the higher side of the level and smashed into fragments. Proceeding down the far gate of No. 6 bank at the "posting faces," where two men had been taken out, I found also great evidence of heat on the timbers, they being charred, and on many of them coked dust. In the far bank "face" there was a large fall, and four men were found buried: one a collier, his trammer, and two woodmen. Down the far gate of No. 7 bank, in the posting "faces" from where four men had been taken out dead, I found evidence of heat, but not so great as in the last one, evidently tailing out to the north. Down No. 8 bank far gate, into the posting face known as Colclough's, at the north side of the face I was stopped by a great fall, to get to the other side of which we went down the last bord but one, at the bottom of which was the posting face known as Akers'-place. Across this the fall before mentioned extended, and as the body of Akers was known to be under this fall, it had to be removed. After the removal I made a careful examination, and although I could not examine minutely the whole of the coal "face" by reason of some of the fallen roof resting against it, from the position in which Akers was found only a few feet from the face, and from the indications of the face I did examine, I have no hesitation in saying a shot was not fired in that place on the day of the explosion, and that therefore the explosion did not originate from a shot in that place. Proceeding up into the rise side places in No. 3 bords, where four men were found killed at the faces, there were indications of great violence, two corves smashed into small pieces, brattice boards broken into chips, the men's lamps broken up, the clothes the men had on were torn from them, and the door at the entrance to the bord from the straight level had been blown uphill with great violence, broken into pieces, and the iron work doubled up. Proceeding out along this bank level to the return air bord and so out uphill to the fault, there were no indications of the explosion. Sheldon and Kilburn, the two explorers, were found near the top of these bords. I passed through the drift, which measures in its smallest place 4 feet 3 wide by 5 feet 3 high, or an area of 22½ square feet. Going down the engine plane again to Briggs' siding level, the first thing to indicate explosion is the doors which were in the level. These I believe were found to be carried "outby," or northward. On the lower side of the level and communicating with the goaf there were some six openings between the doors and the dip bord. The stoppings in these have all been carried uphill. At the bottom of the jenny considerable damage had been done, and a corf a short distance up had been smashed into pieces. Considerable damage had also been done in the dip bords, the direction of the blast appearing to have travelled uphill, and along towards the boundary bord. Continuing down the engine plane a short distance brings us to a stone drift which goes a distance of 360 yards in the measures above the coal. Beyond a small portion of the brick brattice wall opposite to the back incline having been blown down, no damage has been done in these drifts. The men got out alive. Near the "face" several cans were found containing loose powder, two being large ones. Proceeding down the plane to the No. 4 levels, and double No. 3, here, on the north side of the plane, there appears to have been no damage done; doors, &c., are standing undisturbed. Below these levels in the plane stood two doors. These doors have been knocked down and carried a short distance up hill. A stopping appears to have been blown out of the No. 4 low level into the plane northward. Also some tubs standing in the plane appear to have been forced northward. Proceeding along the level at the junction of the drift level and No. 4 level some damage appears to have been done. The direction of the force appears to have been from south to north, or "outby." Passing along the drift at the top, a stopping in a rise opening has been driven out in an uphill direction. Until we arrive at the fourth dip bank there is nothing except one or two stoppings which have been carried uphill. At the fourth dip bank, on the south side of it, two men were at work taking a piece of coal off, and in the "face" there is a shot ready for firing, but not fired. Close by the body of Earnshaw, the deputy for this district, was found, evidently making his way to the place for the purpose of firing this shot. Proceeding down the side of this old bank at the face of it, through a small fault, a narrow bord leads us to Taylor's place. This bord had been driven both ways downhill and uphill and had met nearly the width of the place crooked. Against the left hand set-off lay a large heap of broken brattice boards, broken up into chips. In Taylor's place, which is a narrow heading, in about eight or nine yards, to the left of the bord there is a hole drilled in the coal "face" about three feet; the drill is lying close at the "face" along with the scraper, a lamp hanging up, and as Taylor's body was found at the entrance to the place, it is evident he was drilling the hole when the explosion took place, and throwing down the drill endeavoured to escape but was stricken down within a few yards. Passing along the ending connecting this place to the boundary bords and up these, about ten yards from the No. 4 level, we found the bodies of Bostock's boy, a horse driver, and Taylor's trammer. These men were going up when they were met by the blast, which from the appearance of the tubs close by travelled down the bord, the tubs being piled one on the other and broken. In the level was a dead horse attached to a train of tubs, and this had evidently met a blast coming inby along the level. Just beyond these was a large fall which could not be got over. Proceeding then up the boundary bord we soon had evidence of a blast having travelled uphill. Broken tubs, &c., several stoppings in openings communicating with the goaf had been driven out into the bord. Being prevented by a large fall in the boundary bord from proceeding further, we returned to the No. 4 drift level. A short distance along this were found a train of corves, the horse and driver jammed in between several corves which had been blown from the "passby" against them. Turning to the left into the rise bord, I went into the two places adjoining the goaf, and which have been so graphically described by Mr. Miller. The bodies had been removed, but from the position of the broken tubs

and

and timbers, I had evidence a great blast had come from the goaf through these places and down the bord. A short distance out along the level brings us to Eyre's place. I made a careful examination of this place. There were a number of coals down, and beside them stood a corve partly filled. Another hole had been commenced in the "face." At the right hand side it had only been cut in a few inches. The body of the collier was found a few yards from the "face." From the brattice cloth, &c., which was blown inward, and a coil of fuze twisted and blown into the interstices of the pack wall, &c., I believe the blast to have gone into this place. Close by the fuze was a small powder can which had a small quantity of loose powder in it. From Eyre's place to the engine plane the indications became less definite, and have been before described by me. From the indications thus described by me, and from the evidence heard at this inquiry, it is my opinion that an explosion originated in the north slant drift level; in the dip side places somewhere between No. 4 and No. 8 banks. That the blast set in motion having split in the level, one portion spending itself with much force in the rise bords, the other portion swept down the drift, dividing at the bottom, and passing along the three roads, (which accounts for the damage in the slant level not being great) to the engine plane. There the impetus it had, carried it beyond into Briggs' level, and the gas which was known to be in the goaf there, was then added to the blast, which passed through the goaf to the outlet where the woodmen were at work, and splitting at the No. 4 level, the main force passed into the boundary bord, up to Briggs' level, joined the blast which had travelled along Briggs' level, up the boundary bord and the jenny to the air crossing which was broken down, and thus out by the upcast and downcast shafts. There is no indication of any blast having proceeded along the slant level and drift northward. In the absence of evidence of direct communication of flame to the gas to cause this explosion, as for instance no shot or naked light, we are left to surmise and theory as to the cause or origin of the explosion. It may have proceeded from a defective lamp being taken into gas, or from gas being thrown on to a perfect lamp at such a velocity as to pass the flame. That the lamps used by the deputies or fire triers for shot lighting were defective lamps is my decided opinion. It is an undoubted fact that gas was known to exist in the mine, and in each of these localities which are affected by the explosion, and this for days previously. (Examined by Mr. *Mellor*.) I was Assistant Manager at St. Helen's Colliery for three years before I was appointed Assistant Inspector of Mines. I had previously been at Ince Hall Colliery. (Examined by Mr. *Maule*.) In making my examination of Swaith Main Colliery, I drew Mr. John Mitchell's attention to Rule 8 which was applicable, as there had been gas found four times, and I saw loose powder. (Examined by Mr. *Rhodes*.) I have not made any experiments with a Stephenson's lamp. A deputy Stephenson's lamp is more safe than a Davy lamp.

J. Gerrard.

Frank Newby Wardell, of Wath-upon-Dearn, aforesaid, one of Her Majesty's Chief Inspectors of Mines, on his oath, says:—The district at present assigned to my charge comprises Yorkshire and Lincolnshire. On the morning of the 6th December last, I received a telegram informing me that a fearful disaster had occurred at Swaith Main Colliery. Hastening there at once, I found indeed that the report was not exaggerated. After having been made acquainted with the main facts of the explosion, and learnt from those in charge of the operations what they had done, we held a consultation for the purpose of deciding what steps should be taken for the recovery of the bodies and the restoration of the ventilation, and how these matters could be accomplished with the least amount of risk. It was decided, and very properly in my estimation, to put out the furnace at once. Although the construction of the furnace is such that the return air is not conducted directly over the flame, but passes up the shaft for some distance outside the furnace tube or chimney, yet to prevent any probability of accident, this measure was considered to be advisable. Upon ascertaining the character and extent of the calamity, I communicated immediately with the Secretary of State, who at once directed that my colleague, Mr. Evans, should assist me in my investigations, and instructed Mr. Maule to attend the inquest, and watch the proceedings on behalf of the Government, and I am personally very greatly indebted to both these gentlemen for the most valuable and painstaking assistance they have rendered. It is the expressed wish and earnest desire of the Secretary of State, as it is indeed of all concerned, that this inquiry should be most searching and full, that every fact may be eliminated, which, even in the smallest degree may help to ensure a complete and thorough investigation into the causes of this calamity, and that the result elicited may be the means of indicating some line of action which will at all events tend to lessen the recurrence of these terrible and deplorable misfortunes. The consultation resulting in the extinction of the furnace, I may say, was followed up by others at short durations of time, for several days, during which the recovery of the bodies proceeded. Parties were organised, who, each under one competent and reliable person, confined their operations to one particular section of the workings, the district of each being clearly defined, as well as the work to be done, and in all cases a written report of the proceedings was handed in at the office at the close of each shift. Extreme care was used, and every step taken in the work was well considered beforehand, and I add with gratification that, throughout the operations, the manager and engineers present, who took part in the consultations, together with my colleagues and myself, were unanimous, and acted in concert. The restoration of the ventilation to a sufficient extent to admit of an examination being made of the pit, was a work of some considerable time. Explosive gas and afterdamp had both to be fought against inch by inch, the bodies of the men and the horses being sent out at the same time, but so soon as ever it was practicable, Mr. Evans, Mr. Gerrard, and myself, in company with the manager and others, made an inspection. This inspection was confined to the dip workings or that part of the mine shown on the plan before you, and I have only, therefore, to direct your attention to this locality, leaving out the workings between Swaith and Edmund's Main Shafts, as having been unaffected, and as having in no way participated in any cause which may have led to the explosion. With regard to the colliery itself, I will merely note that the seam here worked at a

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depth of about 230 yards, is the "Barnsley;" that the diameters of the downcast and upcast shafts are 13 feet 6 inches and 12 feet 9 inches respectively, and that the amount of air circulating in the whole mine, according to the last measurement, as recorded before the explosion, was about 76,000 intake and 89,000 return cubic feet per minute. To enter further into any details as to the arrangements, or the mode of ventilating the mine, would be superfluous. These matters have been carefully described by witnesses, and after the close and unrelaxed attention which the members of the jury have paid, and their evident comprehension of the descriptions, it seems to me that they now understand the plan and all it represents, as clearly, if not more so, than I do myself. I will proceed, therefore, to state that, in my opinion, the explosion originally took place in the slant drift level district, in the dip workings, somewhere between Nos. 4 and 8 banks. From No. 8 far gate, in an "inby" direction, indications of the explosion were less manifest, and apparently the force of the blast in that direction has here expended itself. I think it passed up No. 8 near gate, and possibly one or two other gates, dividing itself at the level, and going both straight across to the "faces" of the rise workings, and along it outward, rushing down the drift, and so straight to Briggs' siding, where another and most violent explosion seems to have taken place. From this point the apparent course is upward to the boundary bord, and also through the large 12 acres goaf to the low workings in No. 4 level and No. 4 drift level, where very considerable damage has been done. The direction taken along the boundary bord has been to the overthrow described by some of the witnesses, which was blown down, and hence the blast traversed through the stables to the downcast shaft doing considerable injury at the pit bottom to the cages and conductors. There are very strong evidences that the explosion originated in the district I have described. From a certain point on the slant drift level, everything is blown towards the engine plane, whilst men and horses, throughout the entire distance, are more or less burned. Within the confined limits of the drift, where a greater concentration of the force would exist, there is evidence of extreme violence, and pointing in the same direction. The timber in and near the bottom of this drift is completely riddled on the "inby" side with small stones and coal, some of which are driven into the wood; on the "outby" side no extraordinary appearance presents itself. I think that if the explosion had originally occurred, as suggested by one or two of the witnesses, at the top of the 12 acres goaf, and the flame had then proceeded thence along the slant level, indications of violence would have been traceable on the "outby" side of the timber. It seems also unnatural and improbable to suppose that the flame should have travelled down to the bottom of the dip bord gates, in the slant level district, without igniting gas at the top of the goaves, and it must be borne in mind that in this slant drift level district, orders had been given that no powder should be used while the men were at work, thereby indicating that it required the adoption of special and extra measures of precaution. To discover how the gas ignited, or the actual place of ignition, does not seem to me to be of such importance as to ascertain how or why gas came to exist there. All this must be a matter of speculation and opinion. It is, of course, possible that owing to falls or other causes, a large body of gas may have been liberated, and driven with such a velocity as to fire at a so-called perfect safety lamp. It is equally possible, if the goaves contained gas, to account for the explosion by its displacement on to a naked light, which naked light may have been a defective safety lamp; and that gas existed in different parts of the mine during some weeks preceding the disaster, the report books, as well as the evidence, conclusively prove. With regard to the ventilation of the dip workings of this mine, the distribution of the air should be so arranged that each district might have apportioned to it a separate split of fresh air. As the air is at present conducted, any gases given off and mixed with it in No. 5, must pass through the working places in No. 3; and similarly in No. 2 district with respect to the slant level and the slant drift level workings. I feel it my duty to make the following observations with respect to the general discipline of the mine. In the first place, the eighth general rule of the "Coal Mines Regulation Act, 1872," expressly enjoins that during three months after any inflammable gas has been found in a mine, powder shall not be taken into or be in the possession of any person in any mine, except in cartridges, and yet though gas has been reported here for some time previous to the explosion, powder was taken into the mine loose in canisters. Although my opinion with respect to the use of powder is well known, and has been oft repeated, still if powder actually was allowed to be used in this mine, there ought to have been the most stringent regulations in force respecting it. I refer more particularly now to the fact that colliers were able to, and did, purchase powder in the town or elsewhere, and this, apparently, without any account being kept by those in authority of the amount thus introduced into the workings. Feeling so strongly as I do on the question of the use of powder in Barnsley and Silkstone seams, I cannot but advert once again to it. Whether or not it has in this instance primarily led to the explosion, and in my opinion it has not, still the all-importance of the subject is self-evident. It is marvellous to me that owners and managers will, in mines where it is considered necessary to use locked safety lamps, incur the responsibility of allowing powder to be introduced. The firing of a shot means a naked light, and one, too, of the most dangerous character. In this thick Barnsley coal surely powder can not be a necessity. Reasons which might induce its adoption in a thin seam, have no application here, and it really seems to me to be purely a matter of arrangement between the masters and the men. Special exceptions might be made in the driving of stone drifts, but even then the firing should only be allowed when the workmen generally are out of the mine. I think it most important that a careful examination of the mine should be made before the workmen descend, and such is enjoined by the 5th general, and 9th and 11th special, rules. These rules do not appear to me to have been rigidly enforced, for it seems that in some instances the workmen proceeded to their work with the deputies. It is my opinion also that the districts assigned to some of the deputies are too large. It is quite impossible that such a careful examination of the mine as is absolutely necessary can be made where it must almost take the person, upon whom this responsible duty devolves, the whole

whole of his time simply to walk round his district. As regards abandoned places, and the ventilation of such, I will here simply call your attention to the case of Brough *v.* Humphrey, where it was decided that so much of the mine should be ventilated as may operate on the working places. It is not enough only to ventilate the travelling roads and working places of a mine.

F. N. Wardell.

Thomas Evans, of Derby, Inspector of Mines for the Midland District, on his oath, says:—I arrived at Swaith Main Colliery on the 7th ultimo. I went down on the 13th and 14th ultimo, and examined the dip workings. I have heard the evidence on this inquiry, and I agree generally with the evidence given by Mr. Gerrard and Mr. Wardell. I feel tolerably certain that the first explosion happened in the slant drift level, and that there was a second explosion on the top of Briggs' siding. How the gas ignited it appears to be impossible to tell. I think the important questions to inquire into are where and why did the gas accumulate? The goaves (the 12 acres and some others) were known to contain gas, and the gas, escaping from these goaves, passed into the workings both above the 12 acres goaf and the slant drift level. In my opinion, allowing people to work in the fiery seam of this colliery, along the edges of goaves giving off gas, is attended with considerable danger. In fact I disapprove of the system of working the fiery mines in this district. I think that it is impossible to ventilate the goaves, and any gas given off must of necessity pass to the workings. The sooner the roof falls and the goaves are filled the better. I think the short glass Stephenson lamp is not so safe as a long glass one, or as a Davy lamp.

14 January 1876.

Thomas Evans.

VERDICT.

We find that Joseph Sheldon and Thomas Kilburn, on the 6th day of December last, were accidentally suffocated by afterdamp, while searching for persons injured and killed by explosion of firedamp in Swaith Main Colliery, and that James Blackburn, Andrea Konuck, Thomas Bullock, James Burns and the other 137 persons died from the effects of the said explosion, but the evidence is not sufficient to show the cause of such explosion. And we are of opinion that, according to the evidence, the Swaith Main Colliery is a fiery mine, and that the general and special rules have not been rigidly carried out, and that gunpowder has been recklessly used. We are also of opinion that in all mines where safety lamps are used, the use of gunpowder should not be allowed except in stone drifts, and then only when all the miners are drawn out. And we regret that the miners have not carried out General Rule No. 30, and we think that this Rule should be strictly adhered to.

FURTHER RETURN.

COPY
OF
REPORT
OF THE
SWAITHE MAIN COLLIERY EXPLOSION.

DEPOSITIONS.

(*Sir Henry Selwin-Ibbetson.*)

Ordered, by The House of Commons, *to be Printed,*
20 *March* 1876.

99—I.

Under 3 *oz.*